Figure it Out

Mental Maths

5

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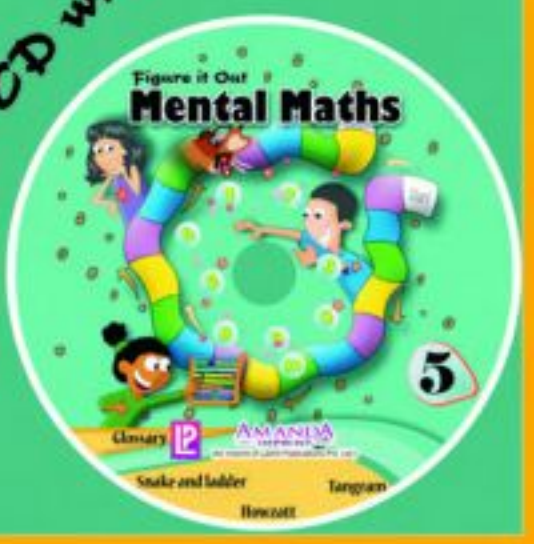

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Aryaman Gupta

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CONTENTS

AN INSIGHT ON MENTAL MATHS

It is a fact that learning is unfolding of inner capacity of a child. This can be enhanced by the parents/ teachers, creating a suitable atmosphere by way of exposure to experiences.

The sense organs of learners, which are processed in the brain and result in learning, are the gateways of experiences. Allow the children's brain to process instead of providing external gadgets or supplements. Allow them to struggle. Give a chance, for their brain to work. Encourage them not to give up and let them try to solve any problem or do any work themselves.

Maths and English form the basic building-blocks for many other important skills in everyday life. Maths helps students to solve any problem themselves—be it academic or in personal life, without asking for any assistance frequently. There is a lot of focus on developing mental maths skills during the early years of learning.

Building of mental capacities and skills is the fundamental purpose of mental mathematics. Teachers and parents have to facilitate in building this capacity. Accept the children under your care and build on their talents. Motivation by the facilitators for logical thinking, connections, pattern recognition, etc., goes a long way in sharpening mental skills of the children.

Talk about maths as much as possible. Try to find examples from everyday life such as using small changes or measuring ingredients, etc., – to make maths relevant and a fun.

ABOUT THE SERIES

Figure it out is a new series of books on Mental Maths along with companion CDs for Grades 1 to 5. This set of books and CDs complements the prescribed maths textbooks to make learning interactive and complete. The books are multi-coloured with child-friendly graphics. The language is simple and easy to understand.

These books fill in the learning gaps and provide fun-based educational material for use at home or in school.

Each book is accompanied by an interactive CD containing game-based mental maths activities. These games provide endless hours of fun and practice. The games help in skill building especially in the areas of the four fundamental operations (addition, subtraction, multiplication, and division) and spatial perception. The animated picture dictionary is an excellent tool to enhance mathematical vocabulary.

Each book is structured into chapters that are further organized into topics. The highlights of the book are:

- A page for snippets of information, things to remember or recap.
- A set of self-contained single-page, topic-wise worksheets designed for drill-work or formative assessment. HOTS (Higher Order Thinking Skills) questions are interspersed with the regular questions to integrate learning and evaluation in a fun and challenging manner. Some of the activities especially in the chapters on Measurement are designed for hands-on, project-based learning incorporating a Maths-lab approach. The picture-based exercises apart from being aesthetic, help sharpen visual interpretation skills.
- 'Up for a challenge?' is a comprehensive revision worksheet covering the concepts learnt in a chapter. You will find this at the end of each chapter.

Together, the books and the CDs energize learning and make excellent tools for formative assessment.

We hope you really like this set of learning material. If you have any feedback, we would love to hear from you. Just send us an email at the following ID.

info@laxmipublications.com

1 Numbers and numeration

Do you know?

- Who does not want to be a millionaire? But do you know how many digits make one million? Seven! That is ten lakh in Indian place value system.
- We come across large numbers when we talk about cells in our body, population of places, bits in the computer hard disk and of course money.
- 10000000 is the smallest 8-digit number. It is written as 1,00,00,000 (one crore) in Indian place value system and 10,000,000 (ten million) in International place value system.

  One crore = Ten million.

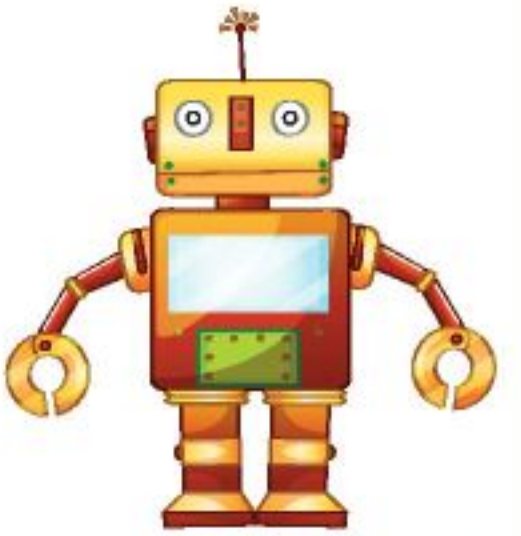
Face value and place value

- Face value can be defined as the value of a digit in a number.
- Place value can be defined as the value of a digit based on its place in a number.

  Confused? Take this number 45,67,893 for example.

  Face value of 4 = 4

  Place value of 4 = 40,00,000.



Checklist for comparison of numbers

The greater number is:

- the number with more digits
- the number that comes later in the number line
- the number with the greater digit in the same place

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Number names

I Read the numbers and the number names given below. Put a (✓) tick mark if they are correct. If incorrect, write the correct number names in the space provided.

1.	40,13,750	Forty lakh thirty thousand seven hundred fifty	☐
2.	1,27,62,500	One crore twenty seven lakh sixty two hundred fifty	☐
3.	44,40,004	Forty four lakh forty thousand and four	☐
4.	5,00,005	Five lakh fifty	☐
5.	3,01,01,001	Three crore ten lakh one thousand one	☐

II Fill the missing numerals to match the number names.

1.	Six crore thirteen lakh seventy thousand and seventy.	6 1 3 7 _ 0 7 0
2.	Four crore forty one lakh fifty two thousand six hundred and ten.	4 _ 1 5 _ 6 1 0
3.	Nine crore seventy nine lakh seven thousand eight hundred and thirty two.	9 7 _ 0 _ 8 _ 2
4.	Two crore twenty three lakh two thousand and fifty five.	2 2 _ 0 2 _ 5 _
5.	One crore fifty lakh twelve thousand and five	1 _ 0 1 _ 0 _ 5

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Ascending order and descending order

I Tick (✓)the series which is in correct ascending order.

1. (a) 1 7 9 5 1, 3 3 4 7 0, 4 5 6 9 5, 2 7 9 8 1 5
   (b) 1 5 8 7 6, 3 6 8 5 4, 2 6 9 8 5, 8 6 5 4 7 2
   (c) 1 2 6 9 8, 3 6 8 4 5, 5 6 4 7 8, 6 5 4 7 2 3
   (d) 2 5 3 6 4, 2 5 3 6 8, 2 4 3 7 9, 3 6 8 5 4 7

2. (a) 1 1 1 5 2, 1 1 2 3 6, 1 1 1 3 9, 9 8 6 4 7 5
   (b) 1 2 3 6 5, 3 2 1 5 4, 4 2 5 3 6, 7 5 4 1 2 3
   (c) 2 5 6 8 7, 2 5 7 9 9, 3 0 2 1 4, 1 1 1 0 2 1
   (d) 1 6 5 4 7, 1 6 5 3 9, 2 1 4 5 7, 3 6 9 5 4 4

II Tick (✓) the series which is in correct descending order.

1. (a) 8 7 5 6 4 1, 5 6 4 7 1, 5 6 4 5 0, 5 2 2 1 6
   (b) 5 6 4 1 2 5, 3 2 1 4 5, 3 1 9 8 6, 3 1 9 8 9
   (c) 1 0 1 0 1 1, 9 8 7 5 4, 9 8 5 9 2, 9 8 5 9 0
   (d) 1 2 4 5 8 9, 9 6 8 4 1, 9 7 5 6 1, 5 6 8 2 9

2. (a) 8 9 6 5 2 1, 8 7 4 2 3, 8 9 5 3 5, 9 6 1 1 1
   (b) 9 6 3 1 5 8, 7 5 4 1 2, 8 5 4 1 3, 2 1 4 7 3
   (c) 2 4 5 9 6 3, 8 6 4 1 2, 5 6 4 1 2, 4 5 2 1 9
   (d) 2 5 6 3 4 2, 7 4 5 8 2, 7 4 3 9 1, 3 3 3 6 5

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3

Building numbers

Using the number cards shown below, help Jane and Mary solve the questions and cross the river.

1. Greatest 7-digit number

2. Its expanded form

3. Place value of 7 in the number

4. Face value of 3 in the number

5. Number name

6. Smallest 7-digit number

7. Its expanded form

8. Place value of 9 in the number

9. Face value of 5 in the number

10. Number name

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Comparing numbers

India attained independence on 15.08.1947

Using these numbers, form the smallest 7-digit number with and without repeating the numerals. Write the numbers. Compare the numbers using <, > or =.

Using all the numbers given in the rectangle, form the greatest 7-digit number with and without repeating the numerals. Write the numbers. Compare the numbers using <, > or =.

Compare
20,93,781 and 20,93,817 using <, > or =

Choose the first 7 numerals from any two mobile numbers. Write them as 7-digit numbers and compare using <, > or =.

Compare
98,82,223 and 98,28,223 using <, > or =

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Place value and face value

Sonal's parents were buying a new flat. They were discussing about the cost of the flat. Sonal found that the numbers were too large! Help her to work out the following.

1. The cost of flat–1 ₹ 1908235.

   (a) Write the place value of 9.

   (b) Write the face value of 9.

   (c) Write the number name.

2. The cost of flat–2 is place values of 8 and 9 interchanged in the above number.

   (a) Write the cost of the second flat.

   (b) Compare the costs of both flats using <, > or =

   (c) What is the place value of 2 in the new number?

   (d) Write the face value of 2 in the new number?

   (e) Write the new number name.

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Rounding off

The population of some states of India in a certain year is given below.

State	Population
Himachal Pradesh	68,58,509
Tripura	36,71,032
Meghalaya	29,64,007
Nagaland	19,80,602
Goa	14,57,723
Arunachal Pradesh	13,82,611

1. Round off the population of Arunachal Pradesh to the nearest hundred.

2. Round off the population of Meghalaya to the nearest ten thousand.

3. Round off the population of Himachal Pradesh to the nearest thousand.

4. Round off the population of Nagaland to the nearest lakh.

5. Round off the population of Goa to the nearest ten.

6. Round off the population of Tripura to the nearest ten lakh.

7. Which two states have the same population when estimated to the nearest ten lakh?

8. Which is the most populated state?

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Roman numerals

Bheem, Chutki, Raju and Kalia went to Rome. The amount of money they carried with them is given below.

Chutki

Bheem

Kalia

Raju

S. No	Character	Dollars with them	Their Expenditure	Spent in Dollars
1.		MMMCMXCIX	Travel	MMDCCCL
2.		MMMDCCCLXXXV	Stay	MCD
3.		MMMDLVII	Food	DCLXXVII
4.		DCCCXLIV	Toys	CDXXXIII

1. Write the amount each one had in Hindu Arabic equivalents.

2. (a) What is the total amount spent by them? Write in Hindu Arabic System.

(b) What was the total amount carried by them? Write in Hindu Arabic system.

3. Find the difference the amount they had and the amount they spent.

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The International number system

Write three large numbers (more than 5-digit.) of your choice in International system.

(a) ☐ (b) ☐ (c) ☐

1. Write the number names of the three numbers.

(a)

(b)

(c)

2. Expand the numbers.

(a)

(b)

(c)

3. Round off the numbers to the nearest ten thousand.

(a)

(b)

(c)

4. Find their sum.

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Up for a challenge?

I Agent Amy is here and today she is looking for a five digit number. These clues will help her.

1. The ten thousands place is equal to the number of legs a spider has. ☐

2. The thousands place is equal to the number of poles the Earth has. ☐

3. The hundreds, tens and ones places are all equal to the total number of days in a week ☐

4. Write the number in figures. ☐
5. Write the number name.

☐

☐

6. Write the expanded form of the number.

☐

7. What number will you get if you add 10000 to the number? ☐
8. What number will you get if you subtract the number from 100000? ☐
9. Write the predecessor of the number. ☐
10. What number will you get if you arrange the digits of the number in ascending order? ☐

II Now Agent Peter challenges Amy in the game of numbers.

1. What is the face value of 7 in the number 9857203? ☐
2. Which is the smallest number among 885231, 9855254 and 886365? ☐
3. Which is the largest number among 676511, 798898, 985568, 975677, 986545? ☐

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2 Addition

Brain-a super computer

Was Addition the first basic operation you learnt? Yes, of course! Soon after we learnt to count, we learnt to add. Now we have calculators and computers to do addition, but even if we do not have them, we have our brain!

Addition keywords

If you find these words in a word problem, be sure there is some addition in your sum!

- Plus
- Add
- More
- Total
- Combined
- In all
- Together
- Additional
- Altogether
- Sum
- Added to
- Both

Properties of addition

Associative property

$(3 + 5) + 2 = 3 + (5 + 2)$

No matter how the addends are grouped in case addition of three or more numbers, the sum will remain (or the sum remains) the same.

Commutative property

$3 + 5 = 5 + 3$

Regardless of the order of the addends, the sum of two numbers will always remain the same.

Additive identity property

$3 + 0 = 3$

The sum of any number and zero is the original number.

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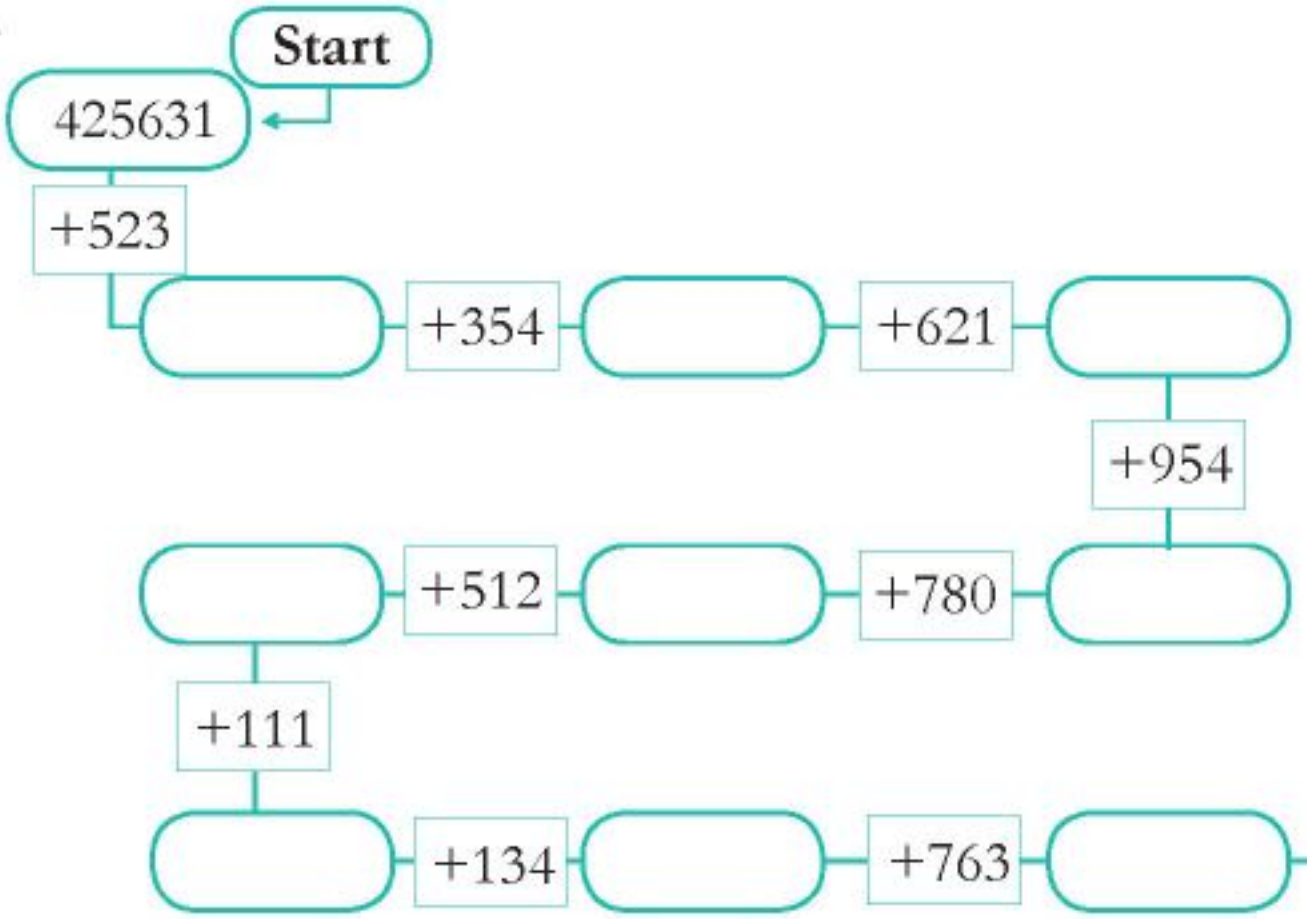
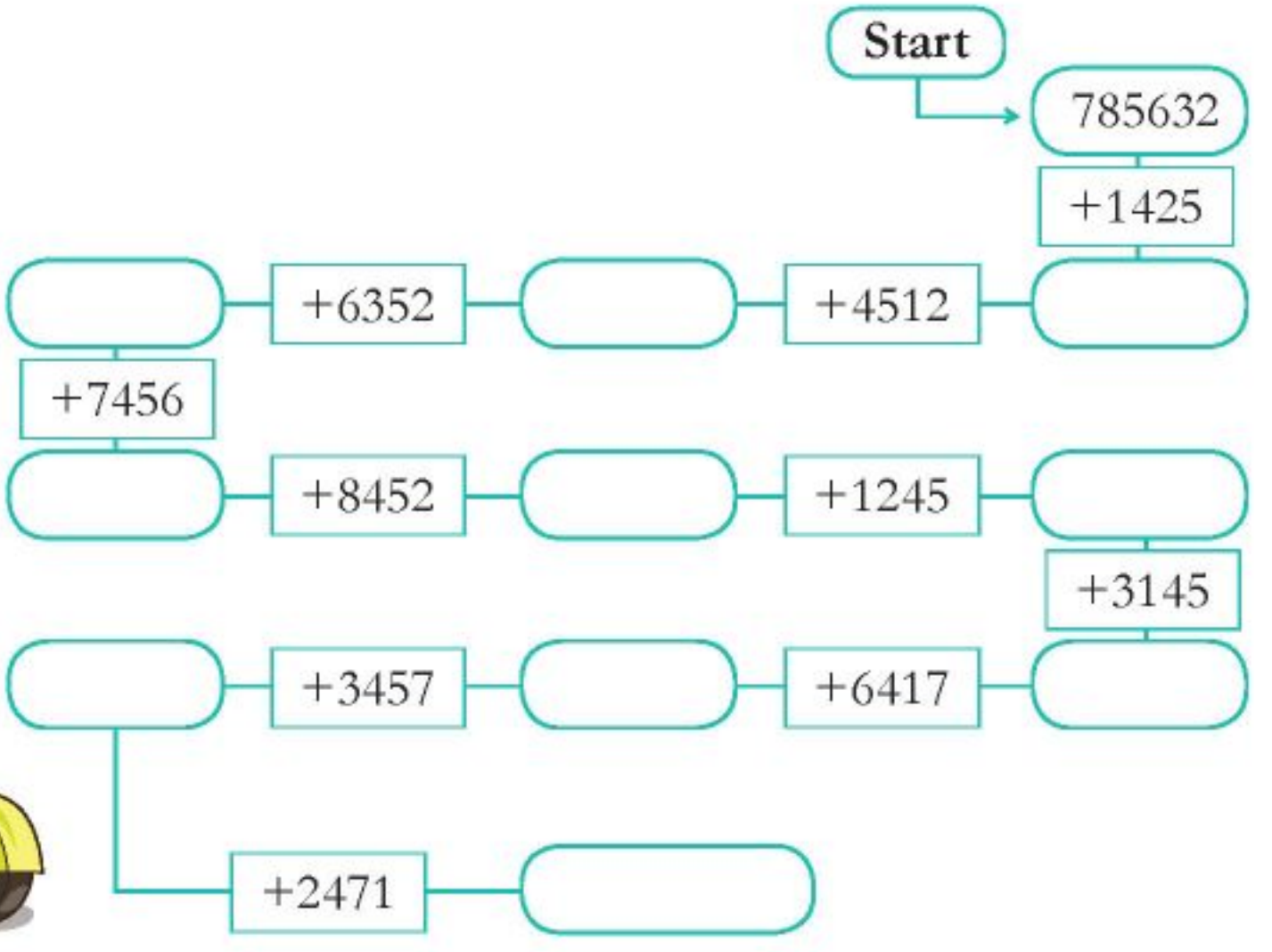
A fun ride

Jack and Jill are on an addition race. Add up and find who wins–Jack or Jill.

1.



2.



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Addition of large numbers

I Raj is learning to add large numbers. Can you help him?

1. 4521375 + 3652478 = ____

2. 6521432 + 1245783 = ____

3. 4124532 + 3216235 = ____

4. 7451231 + 1207456 = ____

5. 5784104 + 3215896 = ____

6. 3214562 + 4551327 = ____

7. 6325412 + 2214531 = ____

8. 3214521 + 5214236 = ____

II Some digits have fallen off from these addition bars. Can you fill in the correct digits?

1.

6		8	5	6	3	3	2
+	1	8	0	3	4	4	
7	2	6	5	9	7	8	1

2.

1	5	8	7	5	4	3	2
+	3		2	3	6	4	
1	8	8	9	9	0	7	7

III Add up these large numbers.

1. 17,65,899 and 17,33,456 = ____
2. 6,57,48,392 and 9,28,37,465 = ____
3. 3,48,57,654 and 1,35,35,232 = ____
4. 2,34,87,034 and 9,12,345 = ____

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Addition–word problems

Solve the following problems.

1. There were 25786 cars and 1789 motor bikes in a parking lot. How many vehicles were there altogether?

2. There are 31456 boys and 31234 girls in a school. How many children are there in the school?

3. A public library has 154300 books on Science, 67532 books on English and 54321 books on Mathematics. How many books are there in the library, altogether?

4. Peter sold 13450 apples in the month of September, 24560 apples in October and 13420 in November. How many apples did he sell in all during these three months?

5. If there are 22360 roses, 39500 marigolds and 111500 jasmines in a garden, how many flowers are there altogether?

6. Anoushka decided to sell old furniture to buy new ones. She sold her bed for ₹15,000, sofa for ₹ 12,000 and dining table for ₹17, 000. How much did she get in all?

7. An indoor stadium has 50457 red chairs, 29388 blue chairs and, 33342 yellow chairs and 253 green chairs. How many chairs are there altogether?

8. A pilot flew 1469 km on his first trip and 1687 km on his second trip. What is the total distance he flew in those two trips?

9. Ankit has ₹9890051 in his bank account while his sister Anaika has ₹8121965. How much money do they have together?

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Find the missing number

Fill the missing number in such a manner that the sum of both the ends make the number in the middle.

1. 485 — 1000 — ☆

2. 29 — 100 — ☆

3. ☆ — 1000 — 850

4. 4567 — 10000 — ☆

5. ☆ — 10000 — 8000

6. 45213 — 10000 — ☆

7. 34400 — 10000 — ☆

8. ☆ — 100000 — 50750

9. 999999 — 10000000 — ☆

10. ☆ — 10000000 — 560006

11. 176 — 100 — ☆

12. ☆ — 100000 — 54213

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Up for a challenge?

Solve the following.

1. Fill the missing number.

   458567 + 698545 + 0 = 458567 + 0 +

2. Fill the missing number.

   352377 + = 455502 + 100076

3. A jam factory makes mango, apple and pineapple jams. If they made 788345 bottles of each, how many bottles of jam did they make altogether?

4. How much is 700000 more than 303132?

5. What will you get if you add 567567 with 256256?

6. Kamal collected 467383 coins and his brother Nagesh collected 522456 coins. How many coins did they collect together?

7. Dinesh wants to sell his land. If he sold one portion of his land for ₹5,66,899 and the rest of the land for ₹8,85,773, how much money did he earn?

8. A library has 54500 magazines and 67890 novels. How many books are there in the library altogether?

9. The population of a town is 600000 and the population of another town is 362023. What is the sum of the population of both these towns?

10. Chetan made a giant bouquet with 16711 roses, 23781 asters and 13443 tulips. How many flowers did he use in making that bouquet?

11. In 1995, a town had 134737 white houses, 167579 blue houses and 276484 grey houses. After five years there were 56701 more houses in the town. How many houses were there in the town in the year 2000?

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3 Subtraction

Humour

Mathematrick

Compensating is a quick trick to do your subtraction, if one of the numbers ends with 1 or 2 or 8 or 9.

- Step 1: Take the number that ends in 1, 2, 8 or 9 and change it to the nearest 10 or multiple of 10.
- Step 2: If you add a number at the start then you must subtract it at the end.

  If you subtract a number at the start then you must add it at the end.

Example: 70 – 8

$= 70 - 10 + 2$

$= 60 + 2$

$= 62$

Subtraction formula

Minuend − Subtrahend = Difference

$8 - 5 = 3$

Subtraction keywords

- Subtract
- Take away
- Difference
- Minus
- Fewer than
- How many more
- How many are left
- Left over
- Less than
- Remaining

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4 and 5-digit subtraction

Help Superhero Rocky defeat the giant to reach his friend.

Start →

1.
$$\begin{array}{r} 67932 \\ -\ 23431 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 83452 \\ -\ \ 6387 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 77480 \\ -\ 36749 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 53791 \\ -\ \ 6872 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 57382 \\ -\ \ 9793 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 87839 \\ -\ 69470 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 87635 \\ -\ 29471 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 63992 \\ -\ 53939 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 87987 \\ -\ 66719 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 77988 \\ -\ \ 8979 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 87237 \\ -\ 43489 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 88955 \\ -\ \ 3446 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 77737 \\ -\ 27479 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 27562 \\ -\ \ 7438 \\ \hline \end{array}$$

End →

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6 and 7-digit numbers subtraction with regrouping

Mr. Owl can only eat mangoes with answers beginning with numbers 4 or 3. How many of these mangoes can Mr. Owl eat?

Mr. Owl can eat ☐ mangoes.

1. 4 5 9 3 2 4 7
   − 2 3 4 3 1 8 7
   ☐

2. 6 8 9 3 3 4 9
   − 5 7 4 5 1 4 7
   ☐

3. 8 2 6 3 2 6 7
   − 7 7 4 3 9 8 4
   ☐

4. 4 7 8 3 8 4 5
   − 5 9 3 1 6 9
   ☐

5. 8 9 5 8 4 4
   − 4 9 6 9 4 5
   ☐

6. 7 6 9 6 2 9 7
   − 2 9 4 3 4 8 9
   ☐

7. 7 9 7 2 5 7
   − 4 8 6 8 8 8
   ☐

8. 6 5 9 3 0 4 9
   − 2 8 4 0 1 5 9
   ☐

9. 8 7 5 9 4 5
   − 2 8 2 1 5 5
   ☐

10. 6 5 8 3 5 8 7
    − 2 7 4 3 1 8 8
    ☐

11. 7 5 8 3 4 4 7
    − 6 2 4 3 1 2 8
    ☐

12. 5 7 3 7 8 2
    − 3 4 4 5 8 4
    ☐

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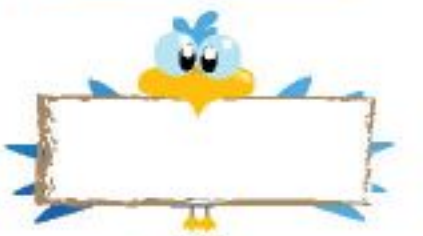
Subtraction in everyday life

Solve these.

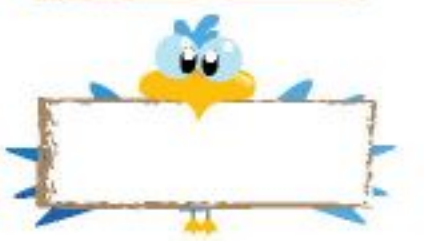
1. Raj had ₹1,00,000 in his bank account. He bought a bike worth ₹49,999. How much money is left in his bank account?

2. Find the number which is 54,406 less than the greatest 6 digit number.



3. The total population of a city is 5,35,000. If 2,89,000 of them are males, find the number of females in the town.

4. A soft toy factory produced 245000 teddy bears in six months, out of which they sold 129546. How many teddy bears were left unsold?



5. There are 525600 minutes in a year. If Julie's dog has to stay awake for 416100 minutes during the whole year, how many minutes of sleep will it get?

6. At a cookie eating competition, 545700 cookies were brought in. The participants together ate 239855 cookies. How many cookies were left?

7. If you have finished reading 580 pages of a book having 1950 pages, then how many more pages will you have to read before you complete the book?

8. There are 12000 chairs in a school. Out of them, 2225 chairs need repair. How many chairs are in good condition?

9. To fill a bucket, we need 45111 drops of water. There are 28976 drops of water right now. How many more drops of water will fill the bucket?

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Addition and subtraction

Fill in the blanks and balance the equation.

1.	142578	+	210245	=				
2.		–	10245	=	254127			
3.	324157	+		=	345781			
4.		+	323145	=	495623	–	54123	
5.	465412	–		=	32145			
6.		+	21457	=	75412			
7.	42135	+		=	52143	+	32145	
8.	57452	+	12304	=		–	5421	
9.	52142	–	6254	=	35214	+		
10.	52314	+		=	87451	–	5412	
11.	32145	+	45127	=		+	32156	
12.	987451	–		=	54127			
13.		+	45781	=	84571	–	10245	
14.	854213	+	423458	=				
15.	84521	–		=	8457	+	54127	
16.	21547	+	98547	=				

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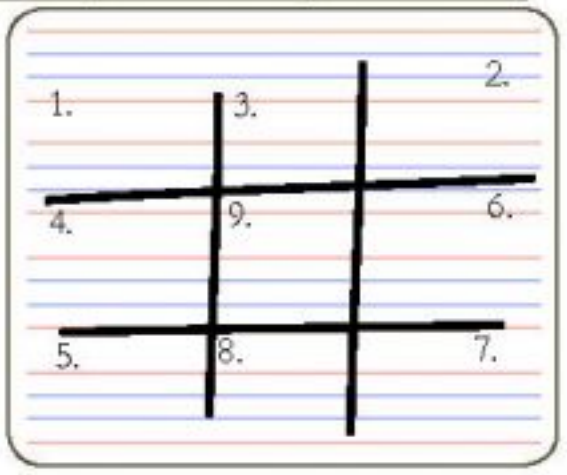
Up for a challenge?

Clara and Tara are playing Crosses and Naughts. Clara is making crosses (X) and Tara is making naughts (O).

Use the decoder to the answers, to find out who won the game.

Decoder

X	297351	59828	115400	300000		
O	188230	273110	54926779	60600	74429	



1. Fill in the blanks to make the equation true.
   980456 – 666605 = ☐ + 16500
2. Renu and Ryan collected 678232 stones together. If Renu collected 490002, how many did Ryan collect? ☐
3. How much is 40228 less than 100056? ☐
4. Deepak has ₹ 2 lakhs in his bank account. If he bought a TV worth ₹45,700 and a fridge worth ₹38,900, how much money would be left in his account? ☐

5. A fisherman caught 998800 fish in a year. He sold 725690 and brought home the rest. How many did he bring home that year? ☐

6. There were 55684568 wheat grains in a bag that has a hole. If 757789 grains were wasted through the hole, how many wheat grains are left in the bag? ☐

7. Divya and Samira have ₹80,000 each in their bank accounts. If they decide to start a business by spending ₹49,700 each, how much money will be left in their account? ☐
8. Find the estimated difference between the numbers 584674 and 297566. ☐
9. Ali is going to a village fair that is 78146 m away from his village. How much more will he have to travel if he has already covered a distance of 3717 m? ☐

..... Date

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4 Multiplication

Multiplication formula

In multiplication, the number to be multiplied is called multiplicand and the number by which we multiply is called multiplier and result comes is called product.

For example:

789 → Multiplicand
× 56 → Multiplier
44184 → Product

Properties of multiplication

1. If you multiply a number by 0, the product is always zero.
   For example : $45 \times 0 = 0$
2. When a number is multiplied by 1, the product is the number itself.
   For example : $45 \times 1 = 45$
3. Commutative Property: The order of the multiplicands does not affect the product. $3 \times 4 = 4 \times 3$
4. Distributive Property: If the sum of two numbers is multiplied by a third number, the product will be equal to the sum of each addends multiplied by the third number. $4 \times (6 + 3) = (4 \times 6) + (4 \times 3)$

Amazing facts of nine

Have you noticed this pattern before? The tens digit plus the ones digit of the product equals nine!

$2 \times 9 = 18 \rightarrow 1 + 8 = 9$
$3 \times 9 = 27 \rightarrow 2 + 7 = 9$
$4 \times 9 = 36 \rightarrow 3 + 6 = 9$
$5 \times 9 = 45 \rightarrow 4 + 5 = 9$
$6 \times 9 = 54 \rightarrow 5 + 4 = 9$
$7 \times 9 = 63 \rightarrow 6 + 3 = 9$
$8 \times 9 = 72 \rightarrow 7 + 2 = 9$
$9 \times 9 = 81 \rightarrow 8 + 1 = 9$

Humour

Teacher: Why are you doing multiplication on the floor?
Student: You just told us not to use tables!

Date ..... Teacher's Sign .....

Expanded form

I. Fill the missing numbers using the expanded form.

(a) $23 \times 32 = (20 + 3) \times$ ☐

(b) $56 \times 14 =$ ☐ $\times$ ☐

(c) $85 \times 34 =$ ☐ $\times$ ☐

(d) $99 \times 66 =$ ☐ $\times (60 + 6)$

(e) $16 \times 10 = (75 + 5) \times$ ☐

(f) $356 \times 27 =$ ☐ $\times (20 + 7)$

(g) $35 \times 15 = (100 + 5) \times$ ☐

(h) $125 \times 20 =$ ☐ $\times (200 + 50)$

(i) $10 \times 10 = (20 + 5) \times$ ☐

(j) $100 \times 10 =$ ☐ $\times (45 + 5)$

II Use the expanded form to find the product of these numbers.

1. $46 \times 65 =$

2. $58 \times 72 =$

3. $10 \times 15 =$

4. $30 \times 50 =$

5. $55 \times 70 =$

6. $60 \times 30 =$

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4-digit numbers multiplication

These children are having a race. To find out who won, solve these multiplication problems. The one with the biggest product on their way wins.

1. 

2335 × 500 =	5693 × 312 =	7397 × 461 =	5283 × 144 =	2648 × 127 =

2. 

1241 × 500 =	2345 × 652 =	7546 × 326 =	6524 × 134 =	2648 × 245 =

3. 

2654 × 325 =	6523 × 123 =	3254 × 871 =	6234 × 164 =	7452 × 369 =

4. 

9745 × 124 =	9854 × 245 =	7458 × 321 =	9655 × 378 =	8542 × 222 =

5. 

8745 × 500 =	3214 × 318 =	7412 × 369 =	4574 × 978 =	3452 × 971 =

The child at number_____ won the race!!!

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Multiplication in daily life

Solve the following.

1. There are 240 candies in a jar. How many candies will be there in 32 such jars?

2. A train can take 1025 passengers in one trip. How many can it take in 10 such trips?

3. Rajesh puts ₹ 7500 into the bank every month. How much will he have in his account after 18 months?

4. A remote control toy car costs ₹ 3116. If Mr. Sharma wants to buy 3 of them for his sons, how much will it cost him?

5. An aeroplane flies at a steady speed of 5405 miles per hour. How many miles will it cover in 17 hours?

6. A family needs 2450 litres of water a month. How much water will they need for 12 months?

7. A movie theatre can seat 1348 people. If a movie runs for 150 days with one show per day, what is the maximum number of people who will be able to see it?

8. How many hours are there in 365 days?

9. A village has 4544 children. If an NGO provides 250 mL of milk to each child, how much milk is needed in all?

10. What is the product of the greatest 4 digit number and the smallest 3 digit number?

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Commutative property

I Help Saba to fill the missing number by using the properties of multiplication.

1. $8 \times 7 = 7 \times$ ☐
2. $967 \times 27 =$ ☐ $\times 967$
3. $(4 \times 7) \times 5 = (5 \times$ ☐ $) \times 4$
4. $48 \times (22 \times 8) = ($ ☐ $\times 48) \times 8$
5. $(110 \times 2) \times$ ☐ $= 110 \times (2 \times 30)$
6. $458 \times$ ☐ $= 0$
7. $65797 \times$ ☐ $= 65797$
8. $62 \times (12 \times 6) = ($ ☐ $\times 62) \times 6$
9. $(124 \times 9) \times$ ☐ $= 124 \times (9 \times 5)$
10. $421 \times$ ☐ $= 0$

II Do these equations show the commutative property of multiplication?

1. $34{,}785 \times 0 = 0$ ☐ Yes ☐ No
2. $1428 \times 122 = 122 \times 1428$ ☐ Yes ☐ No
3. $9874 \times 1 = 9874$ ☐ Yes ☐ No

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Up for a challenge?

I Match the following.

S.No.	Column A		Column B
1.	25 × 1000	☐	☐ 227313000
2.	12 × 11	☐	☐ 25000
3.	3143 × 16	☐	☐ 25064800
4.	647 × 32	☐	☐ 50288
5.	17464 × 33	☐	☐ 20704
6.	77600 × 323	☐	☐ 295098
7.	2154 × 137	☐	☐ 132
8.	5383 × 444	☐	☐ 2390052
9.	33810 × 31	☐	☐ 1048110
10.	227313 × 1000	☐	☐ 576312

II Solve the following problems.

1. What is the product of 2800 and 99? ☐
2. With what should you multiply 94 to get 94000 as the answer? ☐
3. Moushmi puts ₹ 23800 into the bank every month. How much will she have in her account after a year? ☐
4. An NGO plans a housing scheme for people. If making one house would cost ₹ 123400, what will be the cost of making 50 such houses? ☐
5. What will you get if you multiply 450 by the same number? ☐
6. What is the product of the greatest five digit number and the smallest four digit number? ☐
7. A family needs 1450 L of water per month. How much water will it need in one year? ☐
8. Jeena needs 340 mL of batter to make Dosas for her 3 daughters. How much batter will she need to make Dosas for all 45 children in her neighbourhood? ☐

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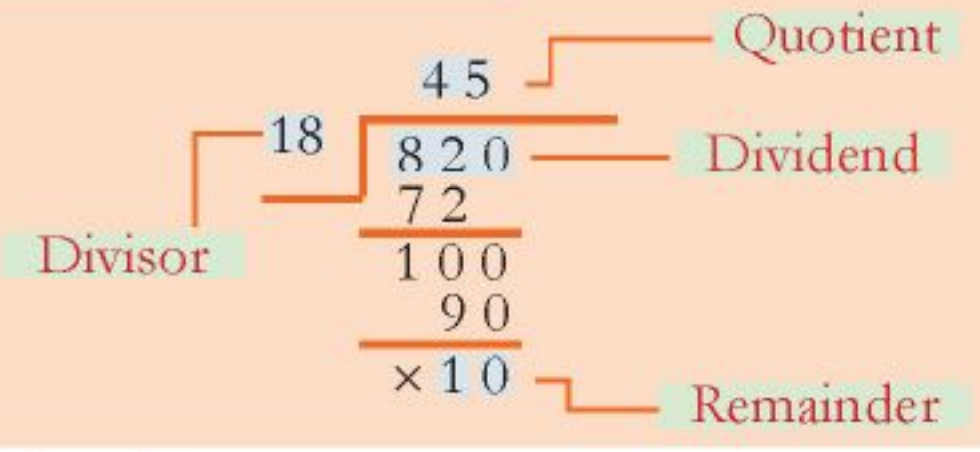
5 Division

Do you know these terms?



Verification

Check your answers after division

Quotient × Divisor + Remainder = Dividend

45 × 18 + 10 = 820

Division key-words

- Divided evenly
- Quotient
- Each
- Split
- Cut
- Equal pieces
- Average
- Every
- Out of
- Ratio
- Shared equally
- Per and part

Division facts

- Every division fact has a multiplication fact to verify it.
- The quotient and the divisor are always the factors of the dividend, if there is no remainder.
- In a division sum the remainder is always smaller than the divisor.
- If the divisor is '1' then any dividend will have the quotient equal to itself.

Four operations

Complete the number sentences by filling in the appropriate operation (+, –, ÷, ×) to balance the equation.

1.	89		25	=	64
2.	178		89	=	2
3.	25		24	=	600
4.	2465		5	=	493
5.	583		246	=	829
6.	421		215	=	206
7.	890		178	=	5
8.	724		106	=	830
9.	784		106	=	678
10.	89		9	=	801
11.	250		10	=	25
12.	1523		135	=	1658
13.	45231		15647	=	29584
14.	124		12	=	1488
15.	16		17	=	272
16.	625		25	=	25
17.	15478		1245	=	16723
18.	17352		723	=	24
19.	81204		45021	=	36183
20.	12457		5014	=	7443
21.	745213		457863	=	287350
22.	12453		124	=	1544172
23.	12457		124	=	12333
24.	32547		98564	=	131111
25.	2457		321	=	788697

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Division of large numbers

Divide the following large numbers.

1.	2,90,685 ÷ 5 =	
2.	27,382 ÷ 2 =	
3.	45,632 ÷ 46 =	
4.	2,11,068 ÷ 99 =	
5.	1,25,814 ÷ 39 =	
6.	2,87,320 ÷ 88 =	
7.	7,77,768 ÷ 46 =	
8.	1,59,936 ÷ 48 =	
9.	4,96,848 ÷ 88 =	
10.	2,86,404 ÷ 29 =	
11.	2,09,376 ÷ 32 =	
12.	4,59,574 ÷ 61 =	
13.	15,960 ÷ 35 =	
14.	10,620 ÷ 45 =	
15.	24,900 ÷ 20 =	

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Division in daily life

Solve the following.

1. There were 14436 displays at an exhibition. If there were 12 rows of exhibits, how many exhibits were there in each row?

2. Sandra, Swati and Joy went to a restaurent and decided to share the bill equally. If the total bill was ₹ 1986, how much did each of them have to pay?

3. At a party, 28500 mL of mango juice is to be poured equally into 500 glasses. How much juice will go into each of the glasses?

4. If Ravi's half yearly salary comes to ₹ 39990, how much does he earn each month?

5. A farmer wants to plant 8910 cabbages in 99 rows. How many cabbages will he have to plant in each row?

6. A 454500 cm bridge out of wooden planks was to be made. If each wooden plank is 90 cm long, how many planks would be needed to make the bridge?

7. Brenda had read 13325 pages of a book in 65 days. If she read equal number of pages every day, how many pages did she read each day?

8. A grocer needs to divide 1792 kg of wheat flour into containers of 14 kg each. How many containers are required to keep the wheat flour?

9. Reba's electricity bill for the whole year was ₹13452. If she used the same amount of electricity every month, how much was her monthly bill?

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Story problems

Henry has a poultry farm.

1. Today he got a lot of 14368 eggs. He has to divide the lot into two. How many eggs will be in each lot?

2. The first lot of eggs goes to the incubator to hatch. All the chicks hatch except 30 of them, as they were spoilt. (**Hint:** Subtract 30 from the lot that went to the incubator). How many chicks have hatched?

3. Half the chicks were sold to poultry. How many chicks are left in Henry's poultry?

4. The second lot of eggs has to be packed in cartons. 32 of them were bad, so were thrown away. There are 16 eggs in a carton. How many cartons will he need to pack all the eggs?

5. Two cartons got lost while they were taken to the market. How many cartons are there now?

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Combined operations

Mr. Bodmas found a puzzle scroll and he knew the answers for it all…. Do you know?

Simplify the following expressions:

1. $16 + 19 - 8 + 8 =$ ☐
2. $23 \times 17 + 24 - (16 \div 2 + 15) =$ ☐
3. $(8 \div 2 + 15) + 13 =$ ☐
4. $(14 \times 13 + 18) + (19 + 17 - 10) =$ ☐
5. $(16 \div 2) \times 11 \times 12 =$ ☐
6. $(21 \times 19) + 3 =$ ☐
7. $10 \div 2 - (16 \div 4) + 13 =$ ☐
8. $2 - (2 - 2) + (7 + 13) + 10 =$ ☐
9. $4 \times 10 + 12 - 10 =$ ☐
10. $16 + 19 - 8 + 8 =$ ☐
11. $12 \div 3 - (25 \div 5) + 20 =$ ☐
12. $9 - (12 - 6) + (13 + 6) + 25 =$ ☐

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Up for a challenge?

I Divide the following.

			Remainder				Remainder
1.	32168	÷ 42 =		2.	342616	÷ 47 =	
3.	4480128	÷ 84 =		4.	4810348	÷ 75 =	
5.	62816	÷ 515 =		6.	120354	÷ 130 =	

II Fill in the blanks.

1.	14826	÷	= 42	2.	69090	÷	= 147
3.	48300	÷	= 138	4.	34848	÷	= 264
5.	8250	÷	= 250	6.	5564	÷	= 107

7. What will be the remainder if you divide 19389 by 38?

8. What would be the estimated quotient if we round off the dividend to the nearest thousand and the divisor to the nearest hundred? 92987 ÷ 1298

9. In five years, Dhanya collected 54000 sea shells. How many sea shells did she collect per month, if she had collected the same number of shells, every month?

10. Jai is a bangle seller. Last year he sold 705328 bangles. How many bangles did she sell per week on an average? (**Hint:** A year has 52 weeks.)

11. If Aanvi's quarterly salary is ₹ 967824, what is her monthly salary?

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6 Factors and multiples

Divisibility check – The quick trick

Sometimes the division method seems too lengthy a process to check divisibility. Here is how you can do it otherwise. Just remember these simple rules.

A number is divisible

- by 2 if – the last digit is 0, 2, 4, 6 or 8
- by 3 if – the sum of the digits is divisible by 3
- by 4 if – the number formed by the last two digits of a number is divisible by 4
- by 5 if – the last digit is 0, 5
- by 6 if – the number is divisible both by 2 and 3
- by 9 if – the sum of the digits is divisible by 9
- by 10 if – the last digit is 0

Finding prime numbers

Eratosthenes, a Greek mathematician found an algorithm to find prime numbers.
It is called the Sieve of Eratosthenes.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Key facts

- Every number is a multiple and factor of itself.
- A factor of a number is smaller than the number.
- A multiple of a number is larger than the number .

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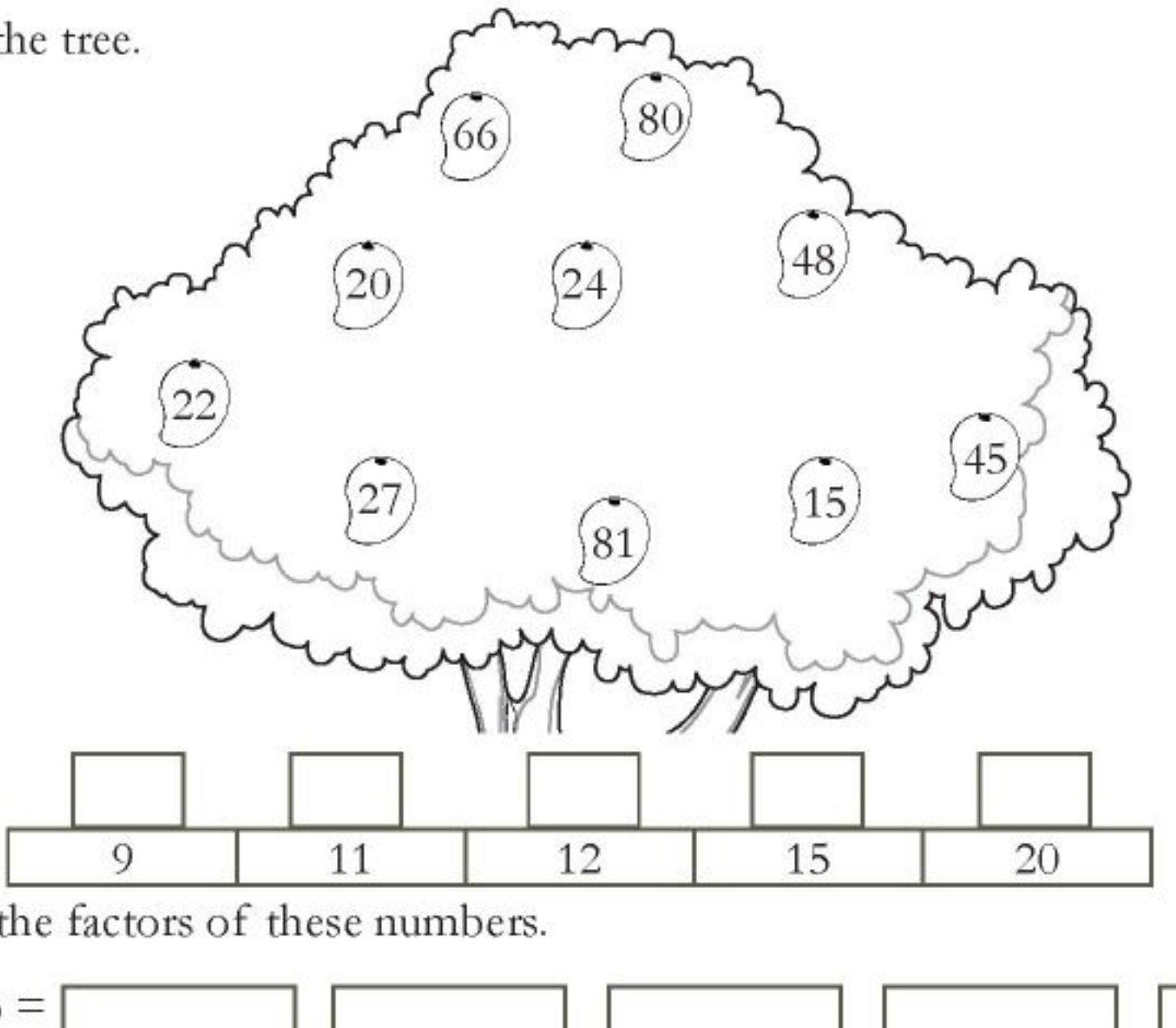
Factors and multiples

I Multiples of some numbers are on the tree. Draw lines from the numbers given below the tree.



II Find the factors of these numbers.

1. 6 = ☐ ☐ ☐ ☐ ☐
2. 12 = ☐ ☐ ☐ ☐ ☐
3. 15 = ☐ ☐ ☐ ☐ ☐
4. 20 = ☐ ☐ ☐ ☐ ☐
5. 36 = ☐ ☐ ☐ ☐ ☐
6. 45 = ☐ ☐ ☐ ☐ ☐
7. 99 = ☐ ☐ ☐ ☐ ☐
8. 114 = ☐ ☐ ☐ ☐ ☐

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Prime or composite number

I A table of numbers from 1 to 50 is given below. Put '×' on all the prime numbers.

1	18	35
2	19	36
3	20	37
4	21	38
5	22	39
6	23	40
7	24	41
8	25	42
9	26	43
10	27	44
11	28	45
12	29	46
13	30	47
14	31	48
15	32	49
16	33	50
17	34	

II Place these numbers in the appropriate boxes.

11, 25, 29, 34, 37, 53, 48, 66, 71, 85, 68, 75, 91, 97, 98, 99							
Prime				Composite			

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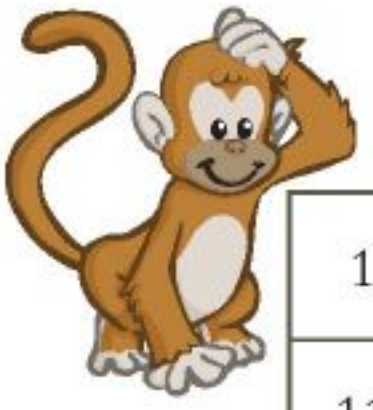
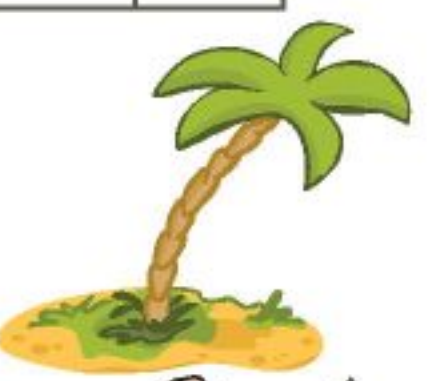
Divisibility by 2 and 3

Check for divisibility by 2 and 3. Circle (○) the number if it is divisible by 2. Cross (×) the number if it is divisible by 3. If divisible by both use both the symbols.



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



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Divisibility by 4 and 9

Sam has two phone numbers with him. One belongs to Raghu and the other to Rajeev. But Sam does not know which one belongs to whom!

The phone numbers are given here.

9991936129 4482791618

Won't you help Sam? Here are some clues:

1. Raghu's phone number:

	Digits
(a) First 3-digit divisible by 4	
(b) Next 3-digit divisible by 9	
(c) Next 2-digit divisible by 4	
(d) Next 2-digit divisible by 9	

2. Rajeev's phone number

	Digits
(a) First 3-digit divisible by 9	
(b) Next 4-digit divisible by 4	
(c) Next 2-digit divisible by 4	
(d) Next 1-digit divisible by 9	

Now write the phone numbers in Sam's diary.

Raghu	
Rajeev	

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Prime factorisation

Ravi wants to obtain the prime factorisation of these numbers using the successive division method. Complete them and write down the prime factorisation.

1.

2	360

Prime factorisation : ____

2.

3	99

Prime factorisation : ____

3.

2	84

Prime factorisation : ____

4.

2	416

Prime factorisation : ____

5.

2	128

Prime factorisation : ____

6.

2	520

Prime factorisation : ____

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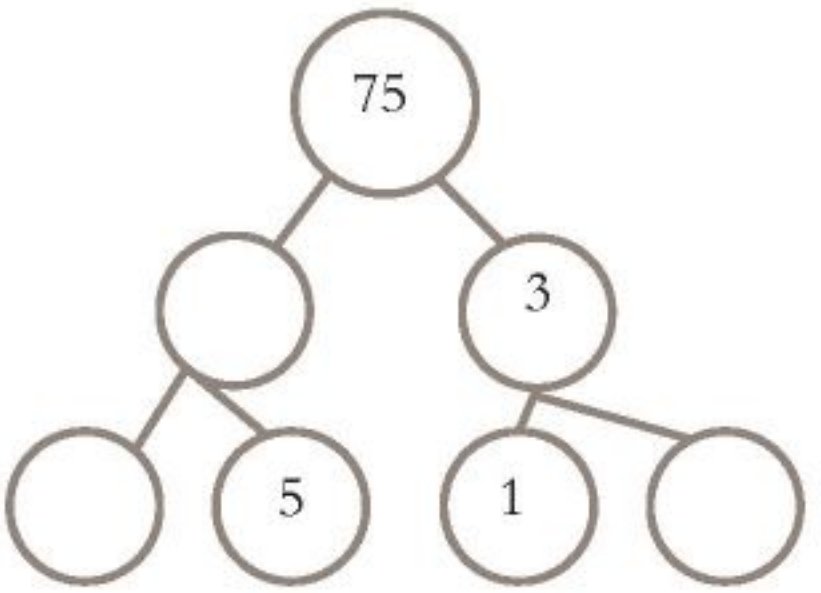
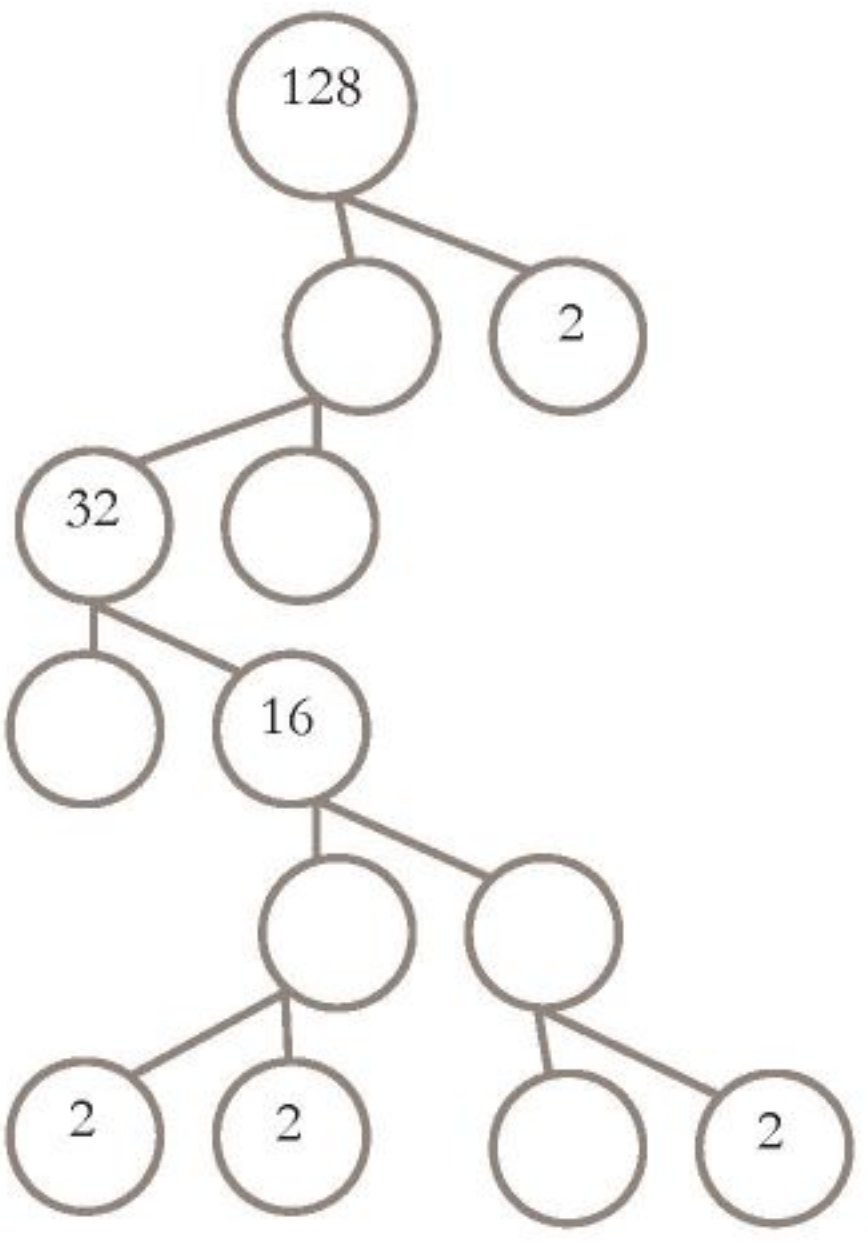
Factor trees

Fill the missing numbers to complete these factor trees.

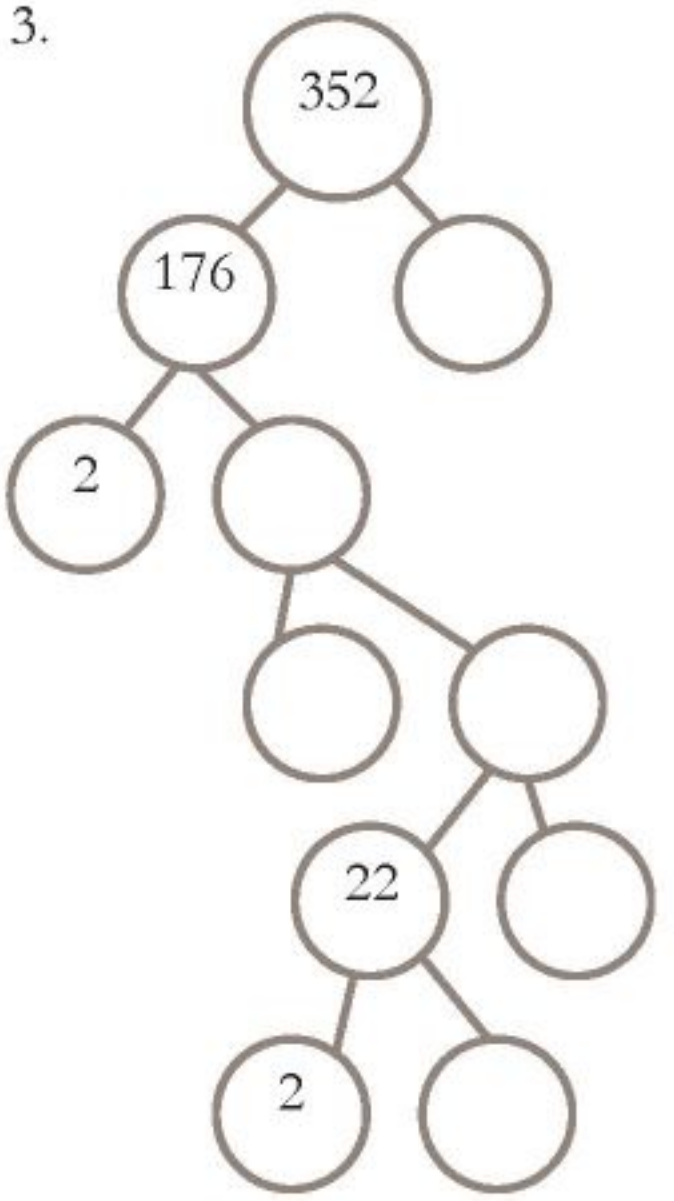
1.



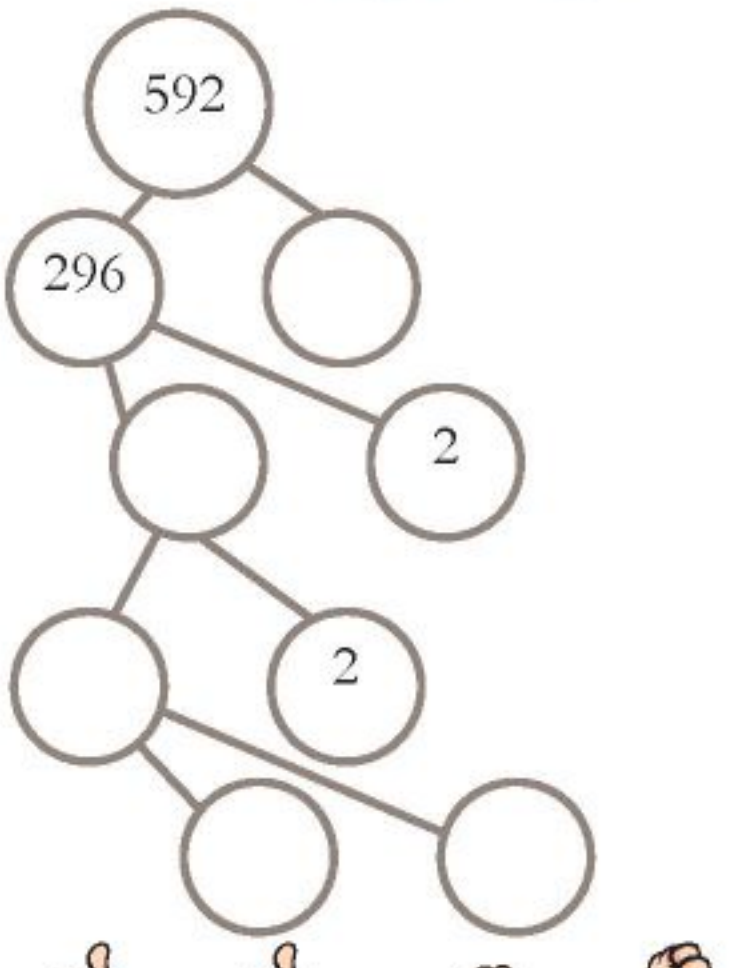
2.



3.



4.



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Common factors

Complete the table by writing the common factors of the numbers given on both the ends.

S. No.	Number	Common factor	Number
1.	21		33
2.	28		46
3.	30		40
4.	45		70
5.	81		36
6.	99		54
7.	114		224
8.	425		205
9.	306		502
10.	633		333
11.	121		341
12.	500		250
13.	425		325
14.	222		444
15.	134		124
16.	105		160
17.	170		180
18.	190		150
19.	180		90
20.	390		145
21.	362		181

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Least Common Multiple (LCM)

I Find the LCM of two numbers by finding the product of their prime factors.

1. 24, 15	2. 60, 10
3. 341, 451	4. 833, 882

II Find the Least Common Multiple of two numbers by prime factorisation method.

1. 400, 480	2. 420, 1050
3. 326, 489	4. 675, 825

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Short cut to LCM

To calculate the LCM of 5, 10, 15 and 20 you need not go into the factors. It will take a minute to find out LCM Follow the steps given below.

Step 1 See, if the largest number that is 20 is multiple of the remaining three numbers. If yes, then 20 will be the LCM. If not, then go to the step 2.

Step 2 Consider the multiples of 20; the next multiple is 40. It is a multiple of 5 and 10 but not of 15. Go to step 3.

Step 3 Now take the next multiple of 20 that is 60. if is a multiple of 5, 10 as well 15. therefore 60 will be the LCM.

Now, try to find out the LCM of the following.

1. 3 | 9 | 6 | 12 → ☐

2. 4 | 6 | 8 | 10 → ☐

3. 2 | 3 | 9 | 12 → ☐

4. 5 | 6 | 10 | 30 → ☐

5. 6 | 8 | 10 | 12 → ☐

6. 10 | 12 | 15 | 20 → ☐

7. 5 | 10 | 15 | 20 → ☐

8. 4 | 12 | 16 | 20 → ☐

9. 2 | 6 | 15 | 20 → ☐

10. 4 | 10 | 16 | 20 → ☐

11. 10 | 15 | 20 | 25 → ☐

12. 2 | 6 | 9 | 12 → ☐

..... Date

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Highest Common Factor (HCF)

I Match these number pairs with their HCF.

S.No	Number
1.	4, 3
2.	12, 30
3.	8, 24
4.	60, 24
5.	120, 30

HCF
12
6
8
30
1

II Find the HCF of these numbers by prime factorisation method.

1. 15 and 30	2. 168 and 196
3. 192 and 216	4. 63 and 49
5. 195 and 260	6. 184 and 86

..... Date

..... Teacher's Sign

HCF and LCM stories

Solve the following problems.

1. Two bells toll with intervals of 10 and 12 seconds. How long will it take for the bell to toll together?

2. Find the least length of ribbon which can be cut into whole number or pieces of length 3 cm, 4 cm, 5 cm. (**Hint:** find LCM)

3. Three children step off from the activity-room. After covering how much distance will they be in line with each other if their steps measure 15 cm, 20 cm and 30 cm. (**Hint:** find LCM)

4. Seema wants to arrange flowers for her room. She has 72 roses, 216 calendulas and 144 tulips. What is the largest possible arrangements she can make?

5. What should be the capacity of the biggest measure which can fill milk cans of 5, 15 and 20 litre capacity?

..... Date

..... Teacher's Sign

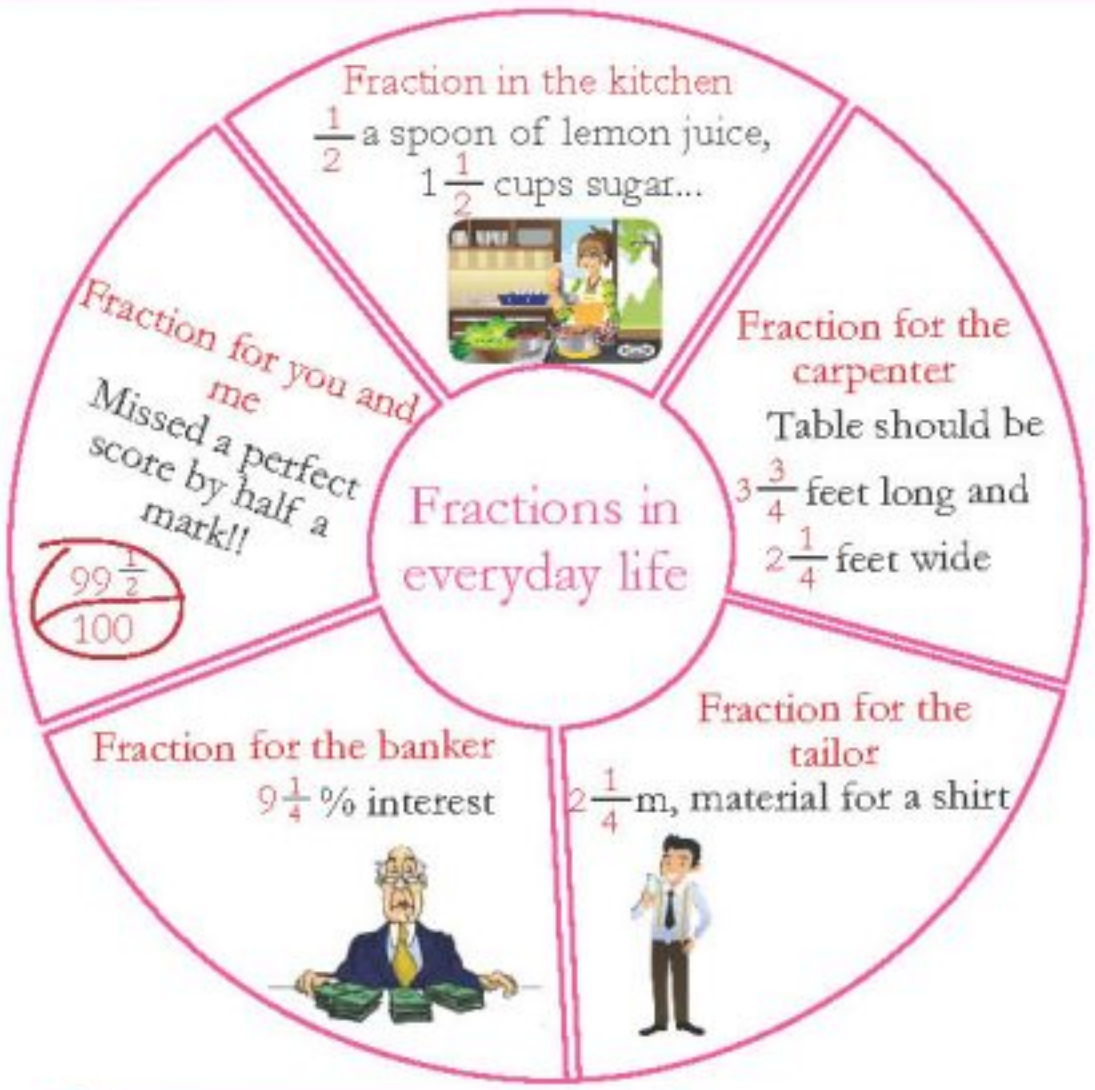
Up for a challenge?

Solve the following question.

1. Which of the following is not a prime number?
   (a) 17 ☐ (b) 27 ☐ (c) 37 ☐ (d) 47 ☐
2. Which of the following is a factor of 54?
   (a) 5 ☐ (b) 6 ☐ (c) 7 ☐ (d) 8 ☐
3. Which of these is a prime number?
   (a) 97 ☐ (b) 98 ☐ (c) 99 ☐
4. What smallest number should be added to 9466 to get a number divisible by 9? ☐
5. Which of the smallest number should be subtracted from 3646 to get a number divisible by 3? ☐
6. Find the sixth multiple of 16. ☐
7. Which is the only prime number between 48 and 58? ☐
8. Which of the following is not a factor of 975?
   (a) 25 ☐ (b) 26 ☐ (c) 39 ☐
9. Which is the greatest number which can divide 663 and 975 exactly? ☐
10. Find the HCF of 48 and 72. ☐
11. What is the HCF of 2400 and 1216? ☐
12. What is the LCM of 30 and 36? ☐
13. Find the LCM of 408 and 1530. ☐
14. Naina is making a scrapbook using 18 photos and 20 newspaper clippings. She wants all the pages to be set up in the same way, with the same combination of photos and newspaper clippings on every page. She also wants to make sure that no items are left over. What is the greatest number of scrapbook pages that Naina can create? ☐

..... Date ..... Teacher's Sign

7 Fractions



It is difficult to identify a field in life where you do not use fraction. And yes…There are $365\frac{1}{4}$ days in a year too!

Fraction facts

A whole number is the same as a fraction with denominator 1.

When the denominators are same we call them like fractions.

In a proper fraction the numerator is smaller than the denominator $\frac{2}{3}$.

Improper fraction has denominator less than numerator $\frac{7}{5}$.

An improper fraction can also be written as a mixed number.

$$\frac{7}{5}=\frac{5}{5}+\frac{2}{5}=1+\frac{2}{5}=1\frac{2}{5}$$

If you multiply the numerator and the denominator of a fraction by the same number, you get an equivalent fraction.

$$\frac{1}{4}=\frac{2}{8}=\frac{3}{12}$$

Date ..... Teacher's Sign .....

Finding fractions

I Renu went to Sri Lanka for her vacation and collected 24 shells from there. She wanted to divide them among her friends.

She gave-

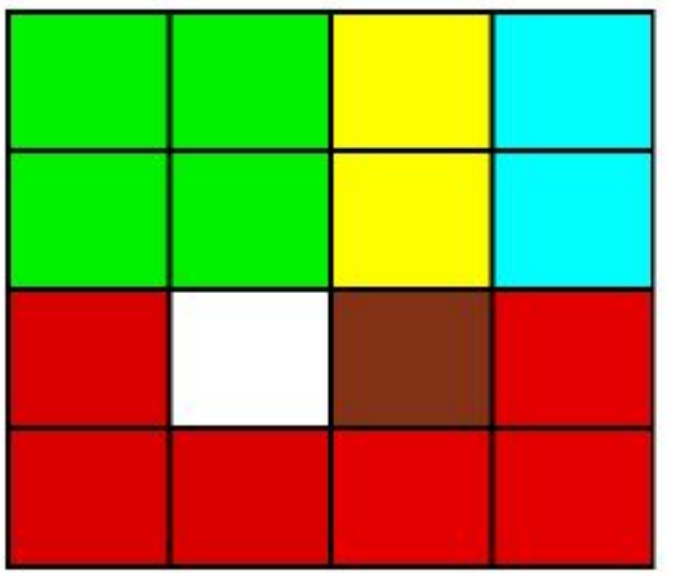
1. 1/4 to Raju. He gets ☐ shells.
2. 1/3 to Priya. She gets ☐ shells.
3. 1/8 to Ram. He gets ☐ shells.

Circle each one's share in the picture above.

She has ☐ shells left with her.

The fraction of the shells left with her is ☐ .

II Look at this square and answer the following questions:



1. What part is coloured red? ☐
2. What part is coloured yellow? ☐
3. What part is coloured white and brown? ☐
4. How much total part coloured as green? ☐

..... Date

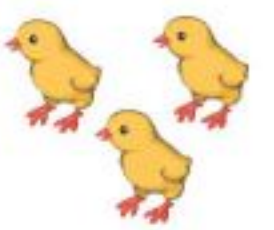
..... Teacher's Sign

Fraction problems

Solve the following problems.

1. This is Uncle Mukherjee's farm. Count the number of animals in the farm. There are ☐ animals totally.

2. There are 5 chickens in the farm. His grand-daughter Mira love to play with three little chicks. The fraction of chicks that were Mira's pets is ☐



3. Mira tried to count these five butterflies in the garden. Two of the butterflies flew away. The fraction of butterflies left behind is ☐

4. Of the eight cows, two were black and white. The fraction of black and white cows is ☐

5. They got 28 L of milk per day. 14 L were used to make paneer. 4 L were distributed among the workers, 7 L were sold and the rest was used by the family. Write the corresponding fractions.

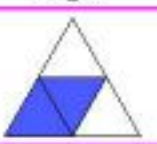
Paneer ☐ Workers ☐ Sales ☐ Family use ☐

..... Date ..... Teacher's Sign

Equivalent fractions

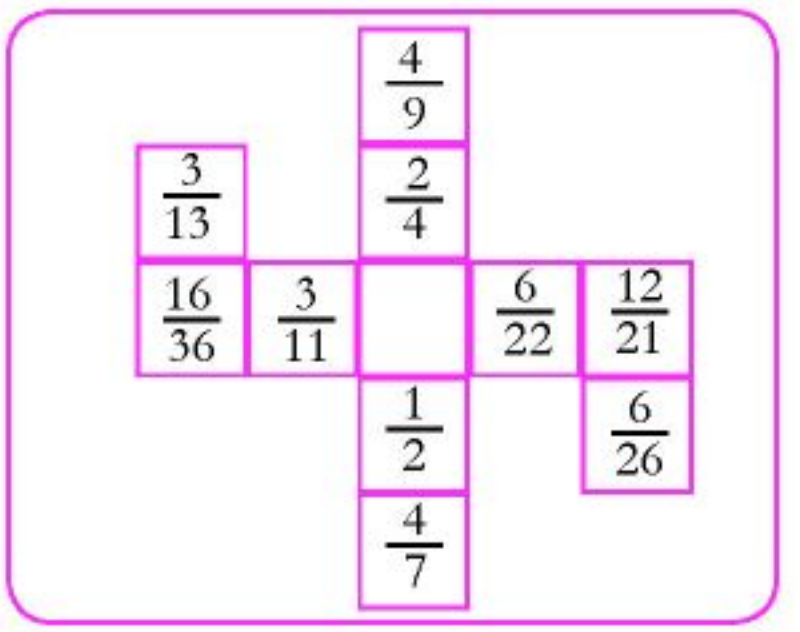
I Divide these rectangles into three equal parts in two different ways.

II Match the equivalent fractions.

1.	
2.	
3.	
4.	
5.	
6.	
7.	

	$\frac{1}{4}$
	$\frac{3}{10}$
	$\frac{1}{2}$
	$\frac{2}{5}$
	$\frac{1}{2}$
	$\frac{3}{8}$
	$\frac{1}{3}$

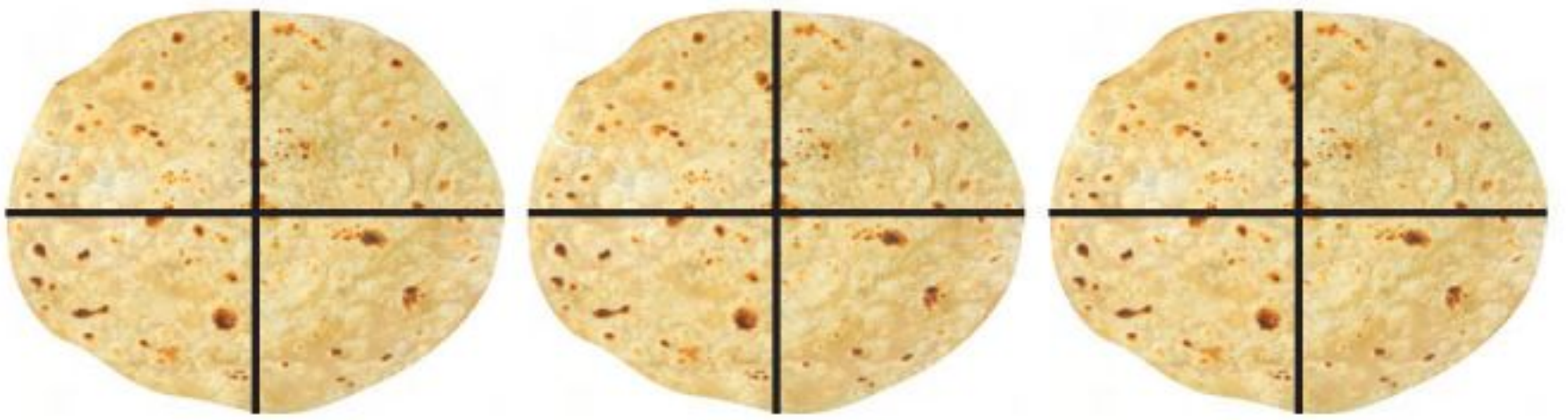
III Identify pairs of equivalent fractions from the boxes given below and shade the matching boxes with the same colour of your choice.



..... Date ..... Teacher's Sign

Adding and subtracting fractions

Mother made three chapatis and divided them into quarters.



1. How many quarters are there? ☐

2. Shyam wanted to eat three-fourth of a chapatti with potatoes. Mark it as P in the above figure.

3. Mira ate half of another chapatti with dal. Mark it as D.

4. Anjali ate one-fourth of other chapati with jam. Mark it as J.

5. Write the following as fractions with denominator 8.

Shyam	Mira	Anjali
$\frac{3}{4} =$	$\frac{1}{2} =$	$\frac{1}{4} =$

6. How much did they eat altogether?

☐ + ☐ + ☐ = ☐

7. How much was left? ☐

..... Date ..... Teacher's Sign

Fraction strip

Look at the fraction strip and complete the following.

1							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$	
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	
$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

1. Fill in each set with like fractions.

(a) 1 = ☐ + ☐

(b) $\frac{1}{2}$ = ☐ + ☐

(c) 1 = ☐ + ☐ + ☐

(d) 1 = ☐ + ☐ + ☐ + ☐

2. Look at the fraction wall and fill in the following.

(a) $\frac{1}{6}$ is greater than ☐ and less than ☐

(b) $\frac{1}{3}$ is greater than ☐ and less than ☐

(c) As the denominator increases, the value of the fraction ☐ (increases/ decreases)

(d) Arrange the following fractions is ascending order:

$\frac{1}{8}, \frac{1}{5}, \frac{1}{6}, \frac{1}{2}, \frac{1}{4}, \frac{1}{3}$. ☐

..... Date

..... Teacher's Sign

Calculation on expenses

Mr. Arun is a scientist. He earns ₹40000 per month. His monthly expenses in fraction are given below. Calculate the amount he spends on each. Fill up the table given and find the amount he could save per month.

House Rent $\frac{1}{4}$

Fruits and Vegetables $\frac{1}{20}$

Entertainment $\frac{1}{40}$

Education $\frac{1}{10}$

Groceries $\frac{1}{16}$

Savings

Miscellaneous $\frac{1}{8}$

Transport $\frac{1}{10}$

Charity $\frac{1}{20}$

Complete the table below:

S.No.	Category	Amount spent
1.	House Rent	
2.	Education	
3.	Groceries	
4.	Fruits and Vegetables	
5.	Transport	
6.	Entertainment	
7.	Miscellaneous	
8.	Charity	
	TOTAL EXPENSES	
	Savings	

..... Date

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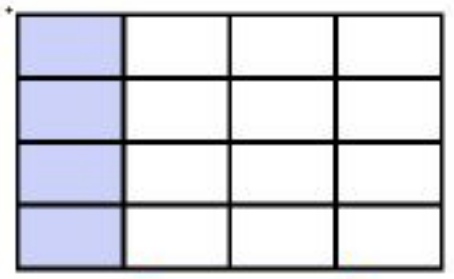
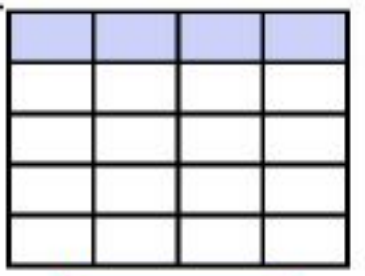
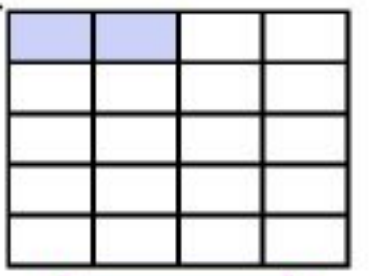
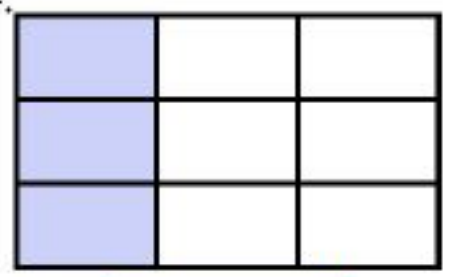
Up for a challenge?

At the entrance of the museum you will see these shaded shapes. What is the fraction of each of the shapes that are shaded, in the simplest form?

1. 

2. 

3. 

4. 

You are entering the "Incomplete Zone" of the museum. Fill in the blanks to make the museum complete.

5. $\frac{110}{\square} = \frac{55}{85}$

6. $\frac{14}{15} = \frac{\square}{105}$

Fill in the blanks using the signs > or <

7. $\frac{8}{15} \square \frac{13}{40}$

8. $\frac{5}{8} \square \frac{10}{19}$

9. $\frac{24}{50} \square \frac{35}{60}$

10. $\frac{7}{9} \square \frac{23}{50}$

You have reached the puzzle corner of the fraction museum. Answer these questions to get out of the museum.

11. If Tito ate $\frac{4}{9}$ of a piece of cake and gave $\frac{3}{9}$ to his sister Tiji. What is the fraction of the amount of remaining cake?

12. Michael spent $1\frac{1}{4}$ hours to finish his Maths homework, $1\frac{3}{4}$ hours to finish his Science homework and $\frac{3}{4}$ hour to finish his art homework. How long did he take to finish his entire homework?

13. A man won ₹ 48,00,000 in a game show. For $\frac{4}{8}$ of the prize money, he bought a house, for $\frac{3}{12}$ of the money, he bought a jeep and the remaining money was deposited in the bank. How much money did he deposit in the bank?

..... Date ..... Teacher's Sign

8 Decimals

Decimals

Pappu, the vegetable shopkeeper writes the prices of vegetables on a blackboard. Today he saw Mrs. Banker staring at the rate chart, shocked.

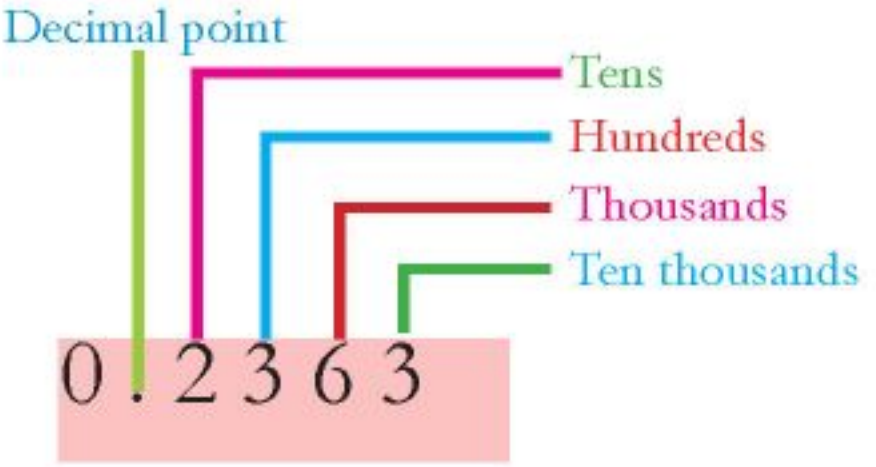
Mrs. Banker: 1 kilo of beans cost ₹ 3350?

Pappu: No, Madam. It says ₹ 33.50.

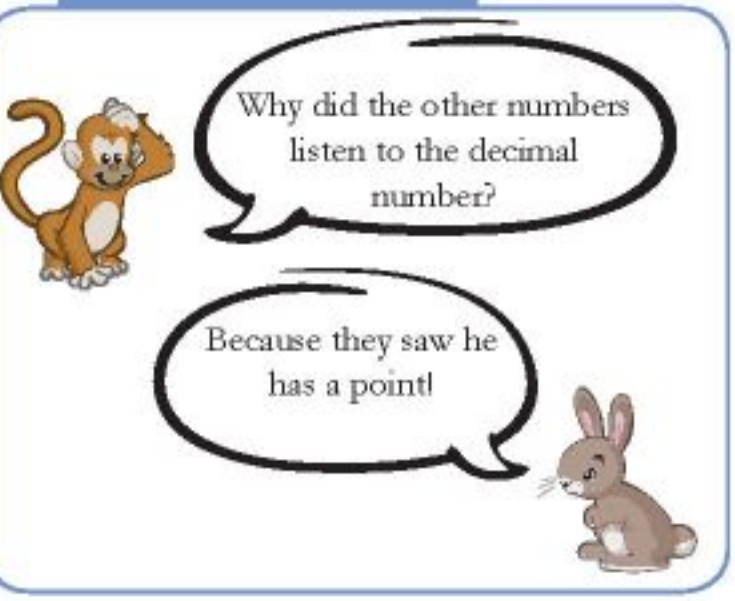
Mrs. Banker: Oh, I think the decimal point got erased.

See, that's the significance of decimal points. In our day to day life, decimal points are used in money, measurement and temperature.

Place value of decimals



Deci - smile



Decimal fraction to common fraction

Step 1: If you do not align the decimal point while addition or subtraction, your answer will be incorrect

$$\begin{array}{r} 5.32 \\ +\,0.25 \\ \hline 5.57 \end{array}$$ Right $$\begin{array}{r} 5.25 \\ +\;\;0.2 \\ \hline 5.27 \end{array}$$ Wrong

Step 2: When converting from decimal to fraction, setting the denominator by the wrong number will give you an incorrect answer.

✗ 0.05 to fraction ➡ 5/10 is incorrect. Original decimal has two digits though 5 is one digit.

✓ 0.05 to fraction ➡ 5/100 is correct.

Number line

Where is the food? Write the position of these food items on the number lines in the boxes provided. One has been done for you.

1.

0.6

2.

3.

Date ..... Teacher's Sign .....

Decimals – addition

I Complete the addition strips.

1.	+ 0.1	0.1	0.4	0.9	0.6	1.2	3.0	4.1	12.3	0.8
		0.2	0.5							
2.	+ 0.3	1.1	2.6	4.0	7.7	2.2	3.1	10.0	2.9	5.5
		1.4								
3.	+ 0.6	4.9	1.3	2.2	9.5	0.6	0	3.0	6.1	3.3
4.	+ 1.0	3.8	9.2	6.6	0.55	13.1	22.2	14.01	48.8	2.08
5.	+ 2.6	8.6	4.6	7.6	30.4	1.23	1.3	6.8	45.36	201.1

II Pick out the answer of addition from the box along with the letter and get the name of the capital of an Indian state.

					Sum	Letter
1.	5.06	+	3.05	=		
2.	8.1	+	2.2	=		
3.	4.24	+	8.05	=		
4.	1.16	+	2.0	=		
5.	2.5	+	8.5	=		
6.	9.13	+	0.66	=		
7.	12.0	+	1.01	=		
8.	6.2	+	3.59	=		
9.	10.21	+	2.08	=		

12.29 D		10.3 Y		3.16 E
	13.01 B		11.0 R	
		8.11 H		9.79 A

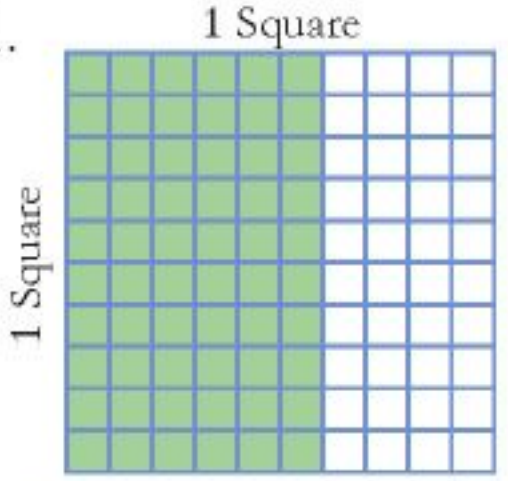
Date ..... Teacher's Sign .....

Decimals – multiplication

Following figures represent 1 × 1 = 1 square. Each small square stands for hundredths or $\frac{1}{100}$ or 0.01. Shade the parts as shown in multiplication of decimals.

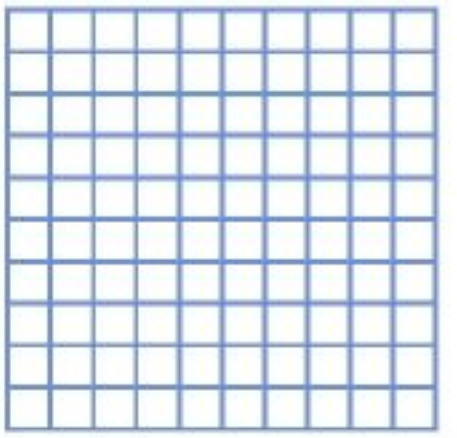
I Multiplying decimal number by a whole number. One has been done for you.

1.



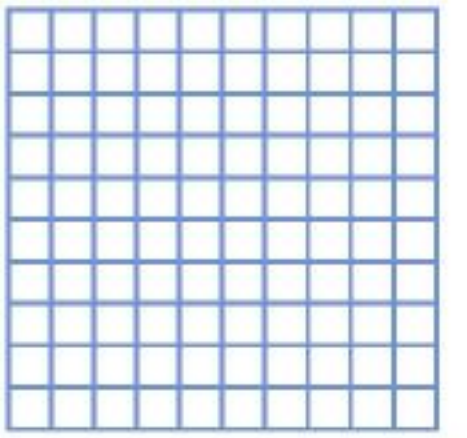
.2 × 3 = .6

2.



.1 × 4 =

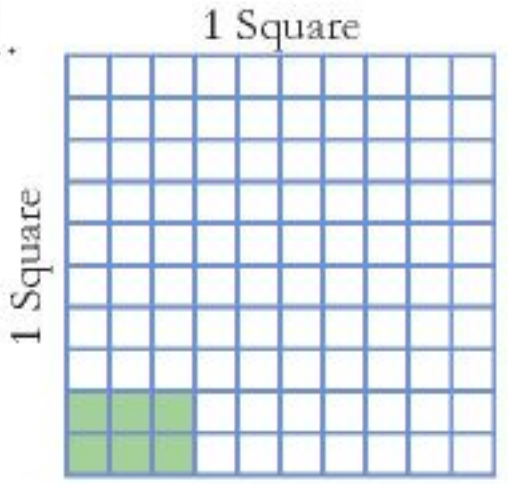
3.



.3 × 1 =

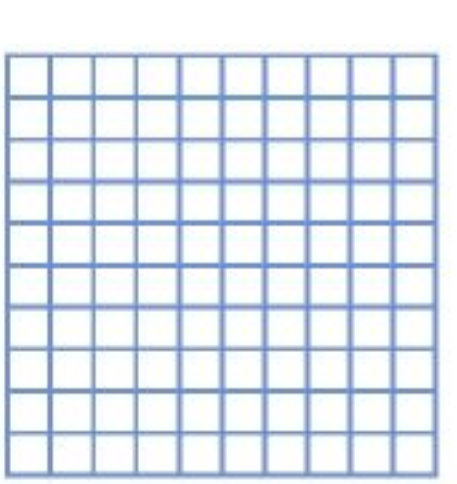
II Multiplying decimal number by a decimal number. One has been done for you.

1.



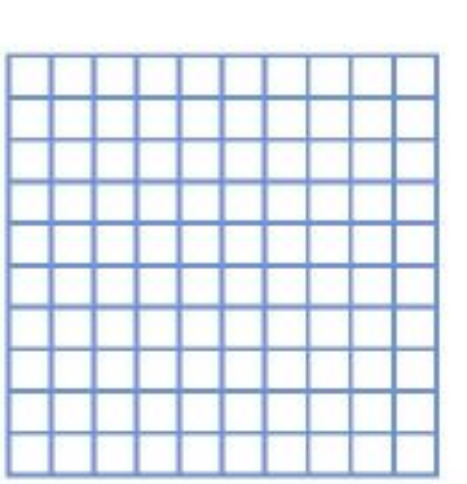
.2 × .3 = .06

2.



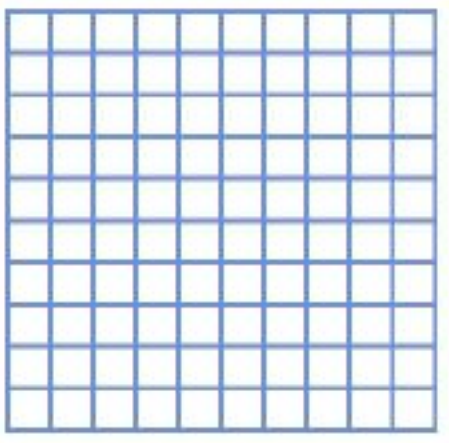
.2 × .4 =

3.



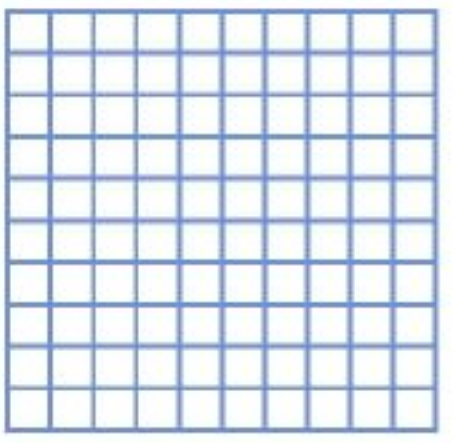
.6 × .5 =

4.



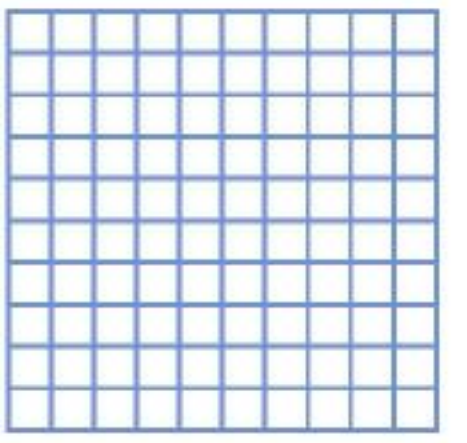
.4 × .6 =

5.



.3 × .5 =

6.



.8 × .2 =

Date ..... Teacher's Sign .....

Reading decimals

Rahim is very good at reading decimals. So his friend invited him for a decimal reading challenge. Fill in the call boxes with answers given by Rahim. One has been done for you.

1. 11.86
Eleven and eighty six hundredth

2. 0.4

3. 0.35

4. 0.567

5. 8.004

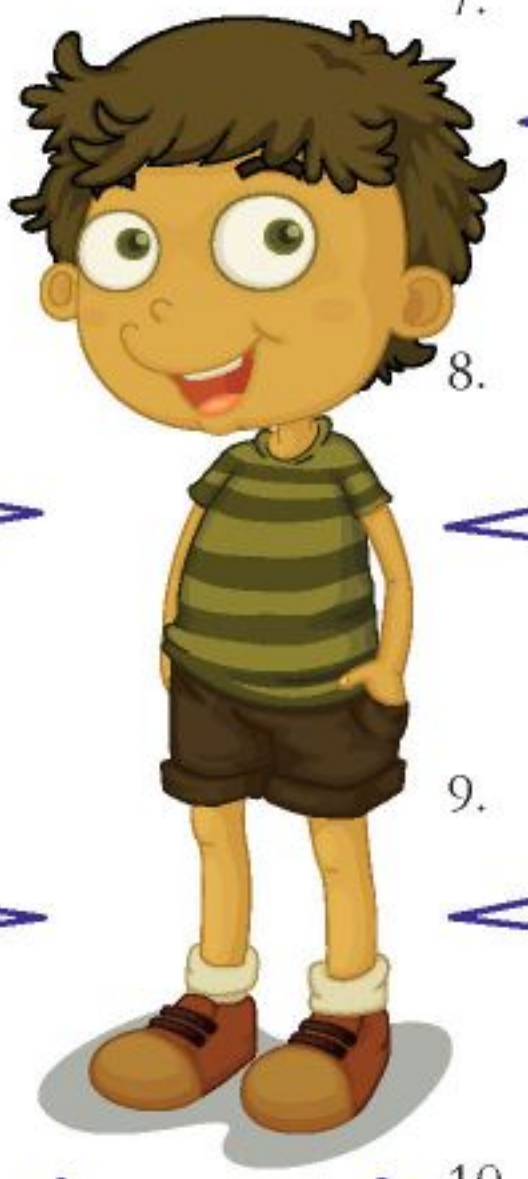
6. 0.05

7. 0.006

8. 6.974

9. 5.878

10. 33.08

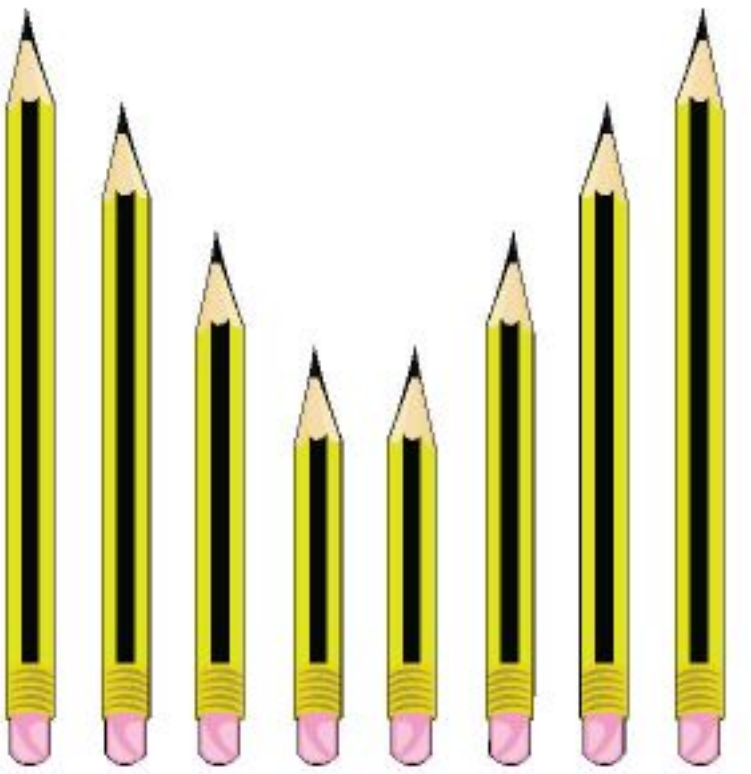


Date ..... Teacher's Sign .....

Ordering decimals

I Eight friends checked the length of their pencils and wrote it down like this.

Kavya	11.233 cm
Rhea	11.5 cm
Anoushka	11.56 cm
Arya	11.330 cm
Sharvari	12.10 cm
Dora	0.90 cm
Ridhima	0.65 cm
Jasmine	11.40 cm



(a) Write the lengths of the pencils in ascending order.

(b) Who has the shortest pencil?

(c) Who has the longest pencil?

II Compare the following decimal fractions and fill in the boxes using a '<'or '>' sign.

1. 10.12 ☐ 10.18
2. 3.567 ☐ 3.557
3. 0.33 ☐ 1.31
4. 3.6 ☐ 6.5
5. 0.9 ☐ 0.98
6. 1.24 ☐ 2.54

..... Date

..... Teacher's Sign

Division and simplification

I Divide the following decimal numbers.

1. 1.204 ÷ 6.02

2. 6.8 ÷ 1.7

3. 1.445 ÷ 8.5

II Divide the following decimal numbers.

1. 2.1214 ÷ 100 = ____
2. 1.482 ÷ 100 = ____
3. 28.12 ÷ 10 = ____
4. 3.191 ÷ 100 = ____

III Simplify.

1. $3.3 \times 0.3 \times 0.03 + 3.01$
2. $4.01 \times 1.1 - 2.4 \div 2$
3. $7.5 \times 1 - 2.5 + 2.75$
4. $0.5\ \{0.65 + (1.65 - 1) + 0.5\}$

Date ..... Teacher's Sign .....

Money

I Write the following as decimal numbers

1. Ninety nine rupees and ninety paise

2. Ten rupees and one paisa

3. Seventy rupees and sixty four paise

II Solve these problems.

1. Sam has ₹ 34.50 in his piggy bank. Sandy has ₹ 54.50. How much money do they have together?

2. Ricky bought tomatoes, eggplant and ladies finger for ₹ 150 from the vegetable shop. He bought tomatoes for ₹34.50 and eggplant for ₹ 39.50 and got back ₹ 50. How much did he buy the ladies finger for?

3. Ragini went to the super market with ₹500. She bought a packet of oil which cost ₹125.50, a soap costing ₹48.50 and a brush worth ₹20.50. How much money would be left with her after paying the bill?

4. If the cost of one newspaper is ₹4.50, how much will the monthly paper bill of September?

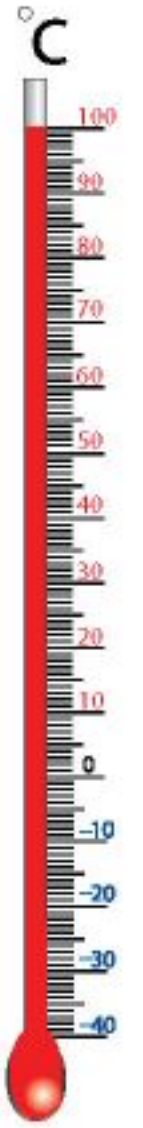
5. Ashi was attracted by the sale price of a pretty jar which cost ₹39.50. She decided to buy 10 of them. How much did it cost her altogether?

6. The water bill of a flat comes to ₹981. If four tenants have to share it among themselves, how much will each one of them pay?

..... Date ..... Teacher's Sign

Temperature in decimals

I Read the thermometer and answer the questions



1. If the temperature shown dropped 0.70 degree, what would the temperature be?

2. If the temperature shown dropped 1.8 degree, what would the temperature be?

3. If the temperature shown rose 3.3 degree, what would the temperature be?

4. If the temperature shown rose 8.2 degree, what would the temperature be?

5. If the temperature shown rose 5.5 degree and then dropped 3.1 degree, what would the temperature be?

II In a week of May in Tamil Nadu, the daily maximum temperatures were as shown in the table.

Day	1	2	3	4	5	6	7
Temp. °C	34.9	35.5	31.2	32.3	35.1	36.5	36.6

What is the difference in temperature between the first day and the last day of the week?

III Della heated up some curry in the microwave. Before she placed the curry in the microwave, it was 2°F. When she got it out it was 53.9°F. How much did the microwave heat it up?

IV When Bhagya started driving, the temperature inside the car was 34.4°C. After driving with the AC on, it became 21.3°C. Calculate the drop in temperature.

..... Date

..... Teacher's Sign

Decimal to fraction

Write the following decimals as fractions. One has been done for you.

1. 0.2115 $\frac{2115}{10000} = \frac{423}{2000}$
2. 0.892
3. 0.11
4. 0.892
5. 0.657
6. 0.313
7. 0.08
8. 0.2
9. 0.2814
10. 0.212
11. 0.281
12. 0.115
13. 0.3258
14. 0.878
15. 0.1487
16. 0.245
17. 0.548
18. 0.365
19. 0.458
20. 0.325
21. 0.2218
22. 0.889

Date ..... Teacher's Sign .....

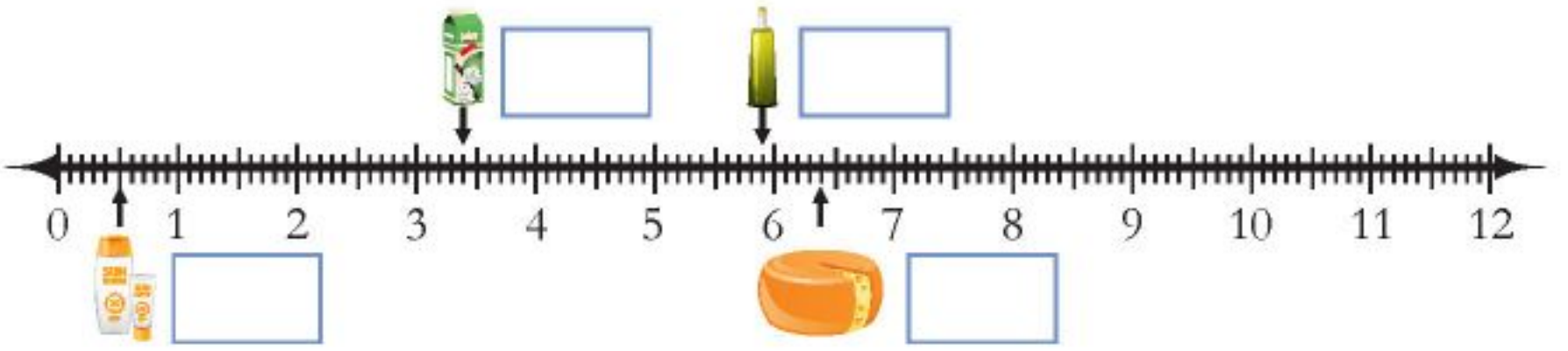
Up for a challenge?

Mrs. Thakur is at the grocery shop. Help her to purchase the things.

1. Mrs. Thakur wants the pack of dry fruits that weighs the least. Which one should she pick?

   (a) 0.690 kg ☐ (b) 0.5 kg ☐ (c) 0.59 kg ☐ (d) 0.60 kg ☐ (e) 0.45 kg ☐

2. The grocer has used a number line to indicate the weight in kilograms of these things. Write down the weight next to the things marked on the number line.



3. Mrs. Thakur bought one packet of biscuit for ₹15.65, one packet of milk for ₹17.35 and one candy for 0.35 p. How much did she spend altogether?

4. The shopkeeper put in 2.878 kg of sugar on to the weighing machine and then took away some sugar. If the machine reads 1.567 now, how much sugar did he take away?

5. If one kg of flour costs ₹ 34.45, how much will 5.385 kg of flour cost?

6. Mrs. Thakur lent ₹ 725.65 to her friend Mahi. She has paid back ₹ 478.85. How much does Mahi still owe her?

7. The Grocer is giving away prizes to all the customers who can solve these decimal problems. Maybe you can win some too…

(a)	What is 0.5 + 0.65?	
(b)	How will you read the decimal number 9.875?	
(c)	Divide the decimal number 4.567 by 100	
(d)	Divide 0.352 by 0.16	

Date ..... Teacher's Sign .....

9 Basic geometrical concepts

What are polygons?

Polygon

Polygons are plain figures, formed by line segments. They may be open polygons or closed polygons.

Convex

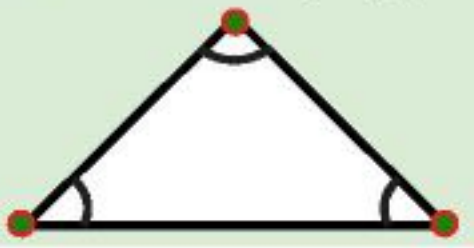
- In case of convex polygon, the line segment completely lies on the polygon.
- To have a closed polygon, we need at least 3 line segments.

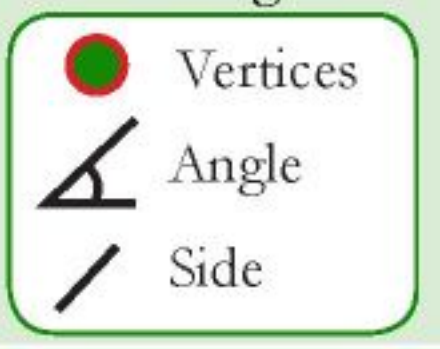
Concave

- In concave polygons, the line segment, joining any two parts of the polygon, does not completely lie on the polygon.

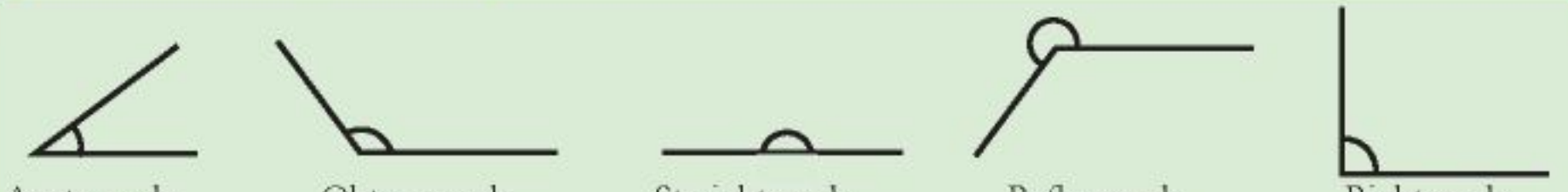
Did you know?

- Shape of a polygon changes as the angle between its sides change.
- The triangle is the most stable polygon.





Meet the angles



Date ..... Teacher's Sign .....

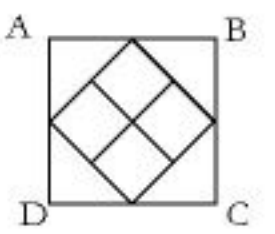
Closed polygon

Tick (✓) the correct option.

1. How many triangles can you find in this figure?

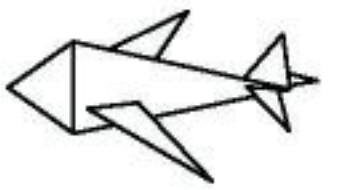
(a) 8 ☐ (b) 6 ☐ (c) 2 ☐ (d) 10 ☐

2. ABCD is a square. A sketch has been made by joining the mid-points of the sides of the square. Count the number of triangles.



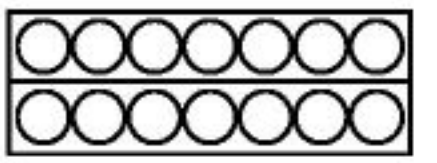
(a) 12 ☐ (b) 10 ☐ (c) 4 ☐ (d) 20 ☐

3. How many triangles are there in this paper plane?



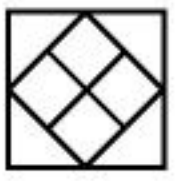
(a) 5 ☐ (b) 7 ☐ (c) 8 ☐ (d) 3 ☐

4. This is a very old board game usually played in villages. How many rectangles do you see in the figure?



(a) 5 ☐ (b) 2 ☐ (c) 1 ☐ (d) 3 ☐

5. How many squares can you find in this figure?

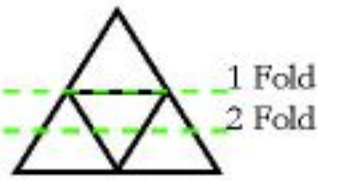


(a) 6 ☐ (b) 2 ☐ (c) 4 ☐ (d) 8 ☐

6. Name the central polygon in this figure.

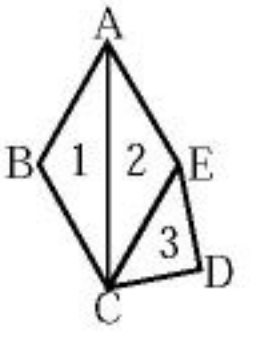
(a) Triangle ☐ (b) Pentagon ☐
(c) Hexagon ☐ (d) Square ☐

7. Which polygon can you see in this figure after 2 folds?



(a) Quadrilateral ☐ (b) Pentagon ☐
(c) Rectangle ☐ (d) Square ☐

8. Name the 3 triangles in the figure given.



1 △ _____

2 △ _____

3 △ _____

..... Date ..... Teacher's Sign

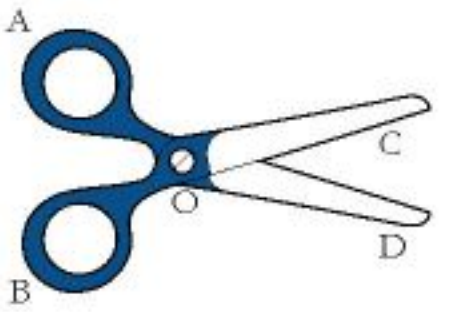
Types of angles

Tick (✓) the correct option.

1. Which of the following is an acute angle?

   (a) 65° ☐ (b) 90° ☐ (c) 95° ☐ (d) 120° ☐

2. A barber uses this pair of scissors for hair dressing. Mark the acute angle when it is in use.

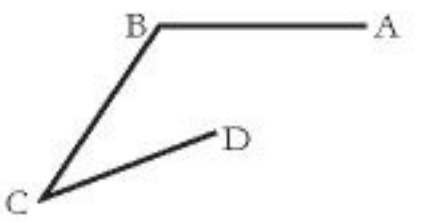


3. If a dumbbell is lifted like this, what type of angle would you see between the shoulder and the forearm?

   (a) Acute angle ☐ (b) Obtuse angle ☐

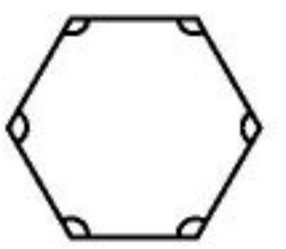
   (c) Right angle ☐ (d) Straight angle ☐

4. Which point in the figure shows an acute angle?



   (a) A ☐ (b) B ☐ (c) C ☐ (d) D ☐

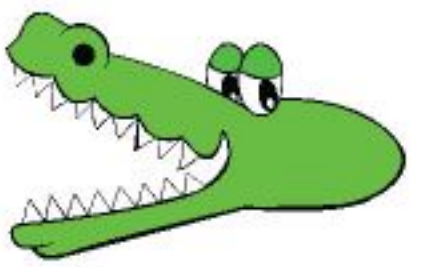
5. In this hexagon, every interior angle is



   (a) An obtuse angle ☐ (b) A right angle ☐

   (c) An acute angle ☐ (d) A reflex angle ☐

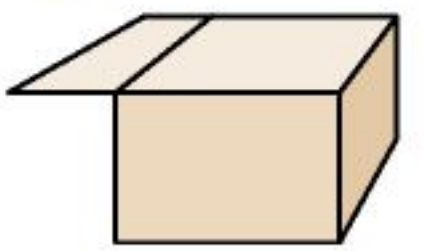
6. When a crocodile opens its mouth to catch its prey, the angle between its jaws is



   (a) Acute angle ☐ (b) Obtuse angle ☐

   (c) Right angle ☐ (d) Straight angle ☐

7. The angle between the lid and the box is



   (a) Acute angle ☐ (b) Obtuse angle ☐

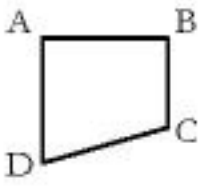
   (c) Right angle ☐ (d) Straight angle ☐

..... Date ..... Teacher's Sign

Names of angles

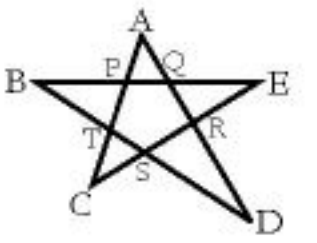
Follow the instructions and do as directed.

1. Name the angle at B in the figure.



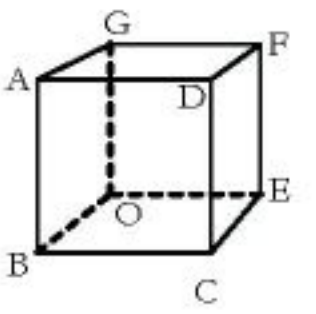
2. Study the figure.

   (a) Name the acute angles in the figure.



   (b) Mark any two obtuse angles in the figure above.

3. Identify any two right angles in the cube and name them.



   (a) (b)

4. An aeroplane takes off at 10°. At what angle is it taking off?

   (a) Acute angle (b) Obtuse angle

   (c) Reflex angle (d) Complete angle

5. Priya is doing Yoga. She is doing an asana where she has to lie down and keep her leg straight, upwards. At what angle would she have to lift her legs from the ground?

   (a) 60° (b) 90° (c) 100° (d) 180°

6. Raju uses a book stand to read books as it is easy to handle them. The angle between the open pages is 120°. What type of angle is it?

   (a) Acute angle (b) Obtuse angle

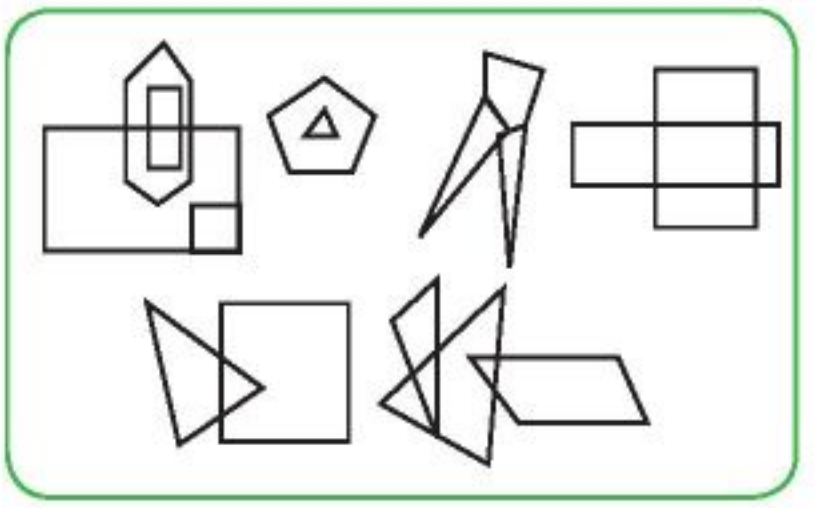
   (c) Right angle (d) Straight angle

Date ..... Teacher's Sign .....

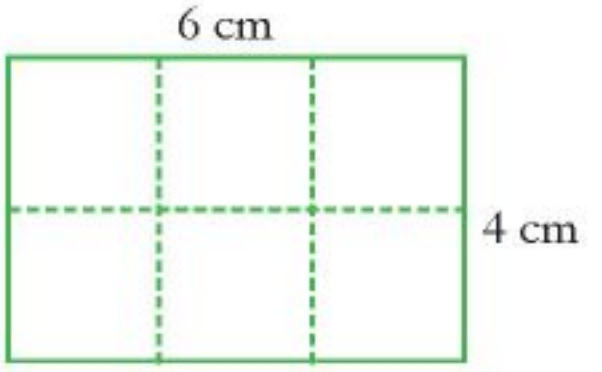
Polygons

I In the pictures, you can find many geometrical shapes jumbled up. Name and count each type of polygon and fill in the blanks given.

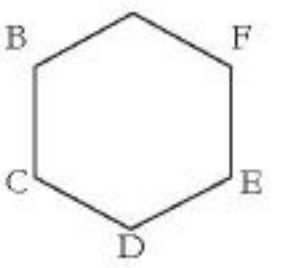
Polygon	Number



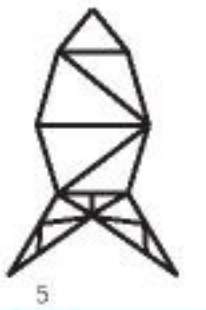
II Sanju invites 6 of his friends on his birthday. He has a chocolate bar 6 cm × 4 cm which he wants to share equally with all her friends. What would be the size and shape of each of the pieces?



III Join the vertices of this six sided polygon any way you want. The only condition is that no two lines should cut each other. How many triangles did you get?



IV Count and write the number of triangles in the given steel structures.



V Raman owns a house plot. He plans to build a house. Looking at the plan, identify the shapes and name them.

Guest room

Kitchen

Drawing room

Toilet

..... Date

..... Teacher's Sign

Up for a challenge?

Are you ready for the 'Great Geometric Challenge'?

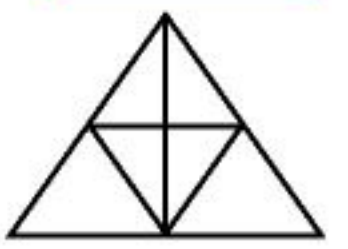
I Round 1 – Polygon Quiz.

Answer these questions to move to the next round.

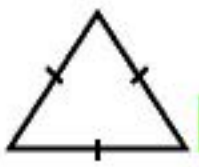
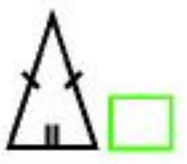
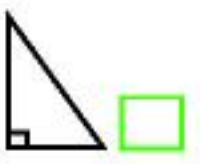
1. Which is the most stable polygon?
2. The line segments which form a polygon are called its
3. What do you call the points of intersection of the adjacent sides of a polygon?
4. Name a 5 sided polygon.
5. What do you call a polygon with 6 sides?

II Round 2 – The Triangle Test.

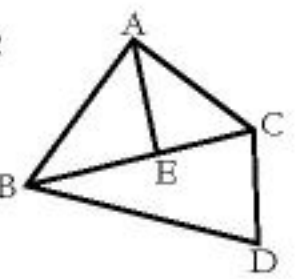
1. What is the sum of the measures of the three angles of a triangle?
2. How many right angles can you see in the figure?



3. Which of the following is an isosceles triangle?

(a)  (b)  (c)  (d) 

4. Name two right angle triangles and an acute angle in the figure given.



III Final round – The Angle Quiz.

1. Name the angle between your index finger and middle finger when you show the symbol for peace.
2. At what angles do the sides of a rectangle meet?
3. At what angles do the sides of an octagon meet?
4. In triangle ABC, angle B = 60° and angle C = 50°. Find angle A.

Date ..... Teacher's Sign .....

10 Measurement

Standard measurement

Measurement of length

Commonly used unit of length are millimetre, centimetre, metre and kilometre.

- 10 millimetres (mm) = 1 centimetre (cm)
- 100 centimetres (cm) = 1 metre (m)
- 1000 metres (m) = 1 kilometre (km)

Measurement of mass

Mass of an object determines how heavy the object is. Commonly used units of mass are kilograms and grams

- 1 kilogram (kg) = 1000 grams (g)

Measurement of capacity

Standard unit of capacity is litres. Commonly used measures of capacity are litres and millilitres.

- 1 litre (L or l) = 1000 millilitres (ml)

Measurement of volume

To find volume, we consider three factors that are length, breadth and height. So its unit is cubic units.

- The space occupied by a solid is called its volume. Volume is always measured in cubic units.
- Volume of a cuboid can also be found by multiplying length, breadth and height.
- Volume of a cuboid = length × breadth × height

Measures of	Kilo (1000)	Hecto (100)	Deca (10)	Standard unit	Deci (1/10)	Centi (1/100)	Milli (1/1000)
length	kilometre (km)	hectometre (hm)	decametre (dam)	meter (m)	decimetre (dm)	centimetre (cm)	millimetre (mm)
mass	kilogram (kg)	hectogram (hg)	decagram (dag)	gram (g)	decigram (dg)	centigram (cg)	milligram (mg)
capacity	kilolitre (kl)	hectolitre (hl)	decalitre (dal)	litre (L or l)	decilitre (dl)	centilitre (cl)	millilitre (ml)

..... Date

..... Teacher's Sign

Measurement–length

I Fill in only the missing units shown with dots. One has been done for you.

S.No	km	hm	dam	m	dm	cm	mm
1.	0.015			15		1500	
2.		.....	10	.....		.....	
3.	.....	1.8	.....				.....
4.			.....		.....	19000	.....
5.	0.2	.....				.....	
6.	.....			.....	350		.....
7.		.....	.....	50		.....	

II Solve.

1. m cm
   52 25
+ 2 80

2. cm mm
   47 6
− 26 7

3. km m
   47 356
−21 572

4. m cm
   532 62
+213 84

III Arrange in columns and add.

1. 68 km 245 m, 17 km 453 m, 86 km 104 m.
2. 74 m 53 cm, 59 m 71 cm, 65 m 32 cm.
3. 12 cm 9 mm, 19 cm 6 mm, 32 cm 5 mm.
4. 34 m 60 cm, 26 m 5 cm, 86 m 2 cm.

1. 2. 3. 4.

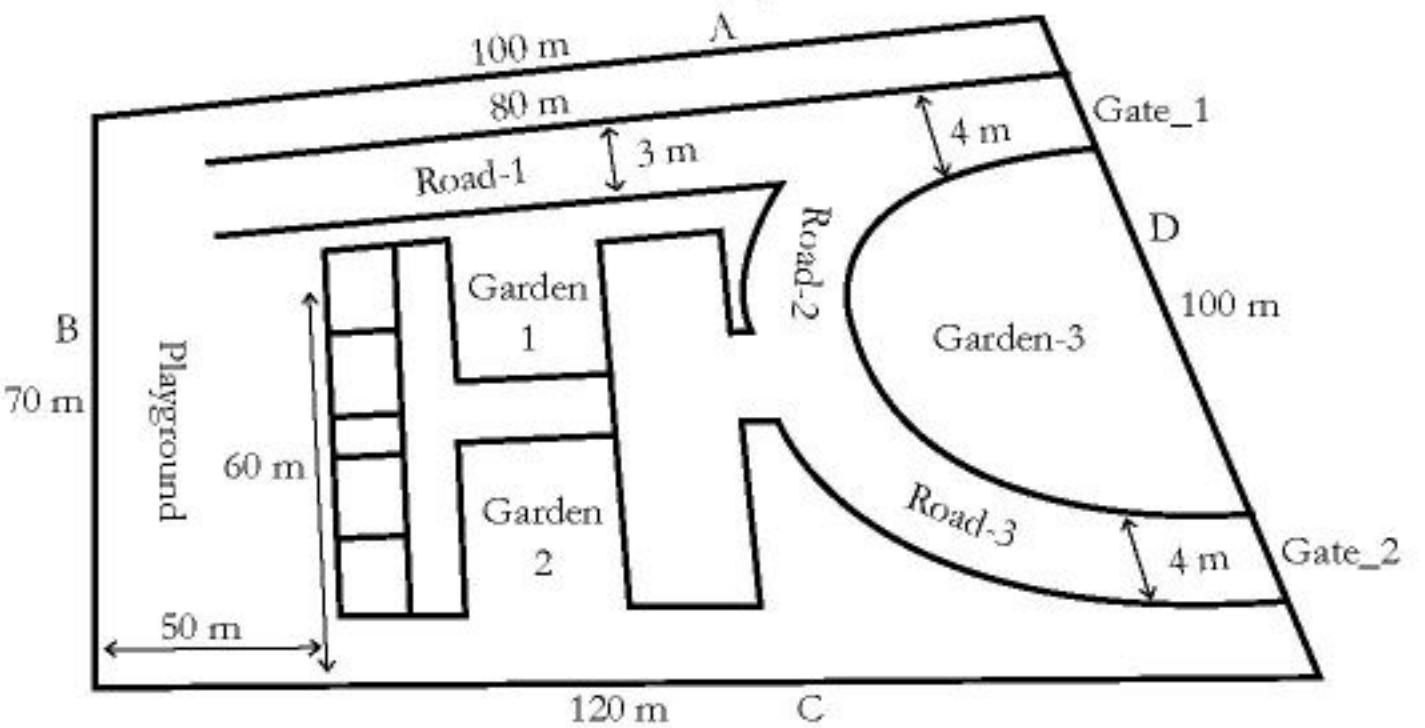
..... Date

..... Teacher's Sign

Problems on measurement

I Look at the sketch of the campus of a school.

Read the sketch and write the following.



(a) Width of the gate 1

(b) Length of the campus wall A

(c) Length of the campus wall D

(d) Length of the playground

(e) Length of the campus wall C

(f) Width of the playground

II Shambu and Kiran are friends. One day Shambu drew a line on his book and asked a tricky question to Kiran. "I want you to make this line shorter, but do not meddle with the line I have drawn". Help Kiran to solve the problem.

III A squirrel is climbing up a slippery pillar. For every meter it climbs, it slips down $\frac{1}{2}$ a metre. It climbs 1 metre in 1 minute. If it takes 9 minutes to reach the top of the pillar, find the height of the pillar.

..... Date

..... Teacher's Sign

Measurement – Mass or weight

I Fill in only the missing units shown with dots. One has been done for you.

S.No	kg	hg	dag	g	dg	cg	mg
1.				4.32	43.2		4320
2.	.....			.....	7777		
3.	.....		75	.....			
4.	5			.....		.....	
5.			.....		.....		6325
6.		.....			.....	290	
7.	.....	753				.....	

II Convert the following.

1. 9 hg → ____ g

2. 150 g → ____ hg → ____ dag → ____ g

3. 13500 dag → ____ kg → ____ hg → ____ dag

4. ____ mg → 2500 g → ____ dg → ____ cg → ____ mg

III Add and subtract the units of mass.

1. kg g
   68 476
   −25 458
   ____

2. kg g
   60 509
   −17 389
   ____

3. kg g
   67 532
   +21 489
   ____

4. kg g
   29 472
   +36 789
   ____

5. kg g
   29 278
   −13 475
   ____

6. kg g
   36 678
   +37 779
   ____

7. kg g
   57 578
   −20 763
   ____

8. kg g
   30 451
   +15 908
   ____

..... Date

..... Teacher's Sign

Measurement – capacity

I Fill in only the missing units shown with dots. One has been done for you.

S.No	kl	hl	dal	l	dl	cl	ml
1.				3.63		363	3630 .....
2.	.....	72		.....			
3.		.....	.....		4328		
4.	.....		162			.....	
5.	2		.....	.....			
6.			.....	932	.....		
7.	.....	207		.....			

II Convert the following.

1. Convert into kl and l

(a) 65341 = ☐ kl ☐ l

(b) 5341 = ☐ kl ☐ l

(c) 6901 = ☐ kl ☐ l

(d) 391 = ☐ kl ☐ l

2. Convert into l and ml

(a) 2600 ml = ☐ l ☐ ml

(b) 689 ml = ☐ l ☐ ml

(c) 457 ml = ☐ l ☐ ml

(d) 86 ml = ☐ l ☐ ml

3. Convert into l and dl

(a) 45 dl = ☐ l ☐ dl

(b) 175 dl = ☐ l ☐ dl

(c) 8 dl = ☐ l ☐ dl

(d) 63 dl = ☐ l ☐ dl

III Add and subtract the of units of capacity.

1.
l	ml
56	672
−14	896

2.
l	ml
46	863
−11	689

3.
l	ml
84	631
+10	756

4.
l	ml
53	756
+23	864

5.
l	ml
36	652
−16	469

6.
l	ml
36	336
+25	236

7.
l	ml
63	632
−60	236

8.
l	ml
39	998
+40	639

..... Date

..... Teacher's Sign

Measurement – volume

I Find the volume of the following cuboids.

1. Length 8 cm, breadth 6 cm, height 4 cm.

Volume = ☐ cu units

2. Length 7 mm, breadth 4 mm, height 3 mm.

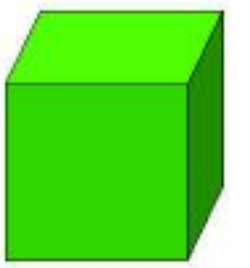
Volume = ☐ cu units

3. Length 4.5 cm, breadth 4 cm, height 3 cm.

Volume = ☐ cu units

II Find the volume of the following cubes.

1. Length of a side = 8 mm — Volume = ☐ cu units
2. Length of a side = 1.2 cm — Volume = ☐ cu units
3. Length of a side = 20 cm — Volume = ☐ cu units



III Complete the table by filling the missing measure.

S.No.	Length	Breadth	Height	Volume
1.	12 cm	10 cm		960 cu cm
2.		9 m	5 m	495 cu m
3.	17 mm		7 mm	595 cu mm

IV Solve the following.

1. How many cubical chalkboxes of 3 cm can fit into a cardboard box of length 12 cm, breadth 9 cm, height 6 cm? ☐

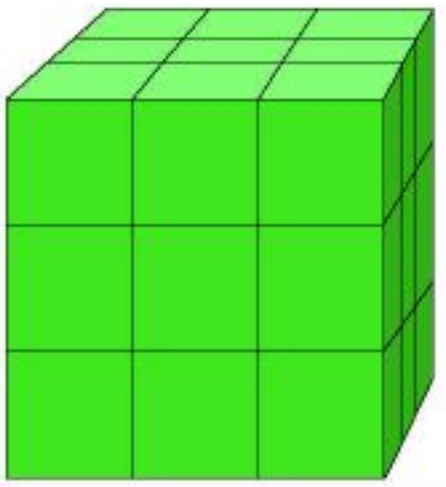
2. Calculate the number of matchbox of length 5 cm, breadth 2 cm and height 1 cm that can be stored inside a box of length 10 cm, breadth 4 cm and height 3 cm. ☐

..... Date ..... Teacher's Sign

Volume of cube and cuboid

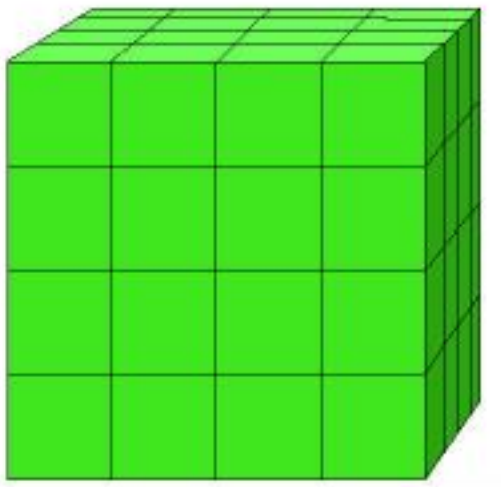
Find the volume of the following figures by counting the cubes.
(consider 1 square as 1 unit)

1.



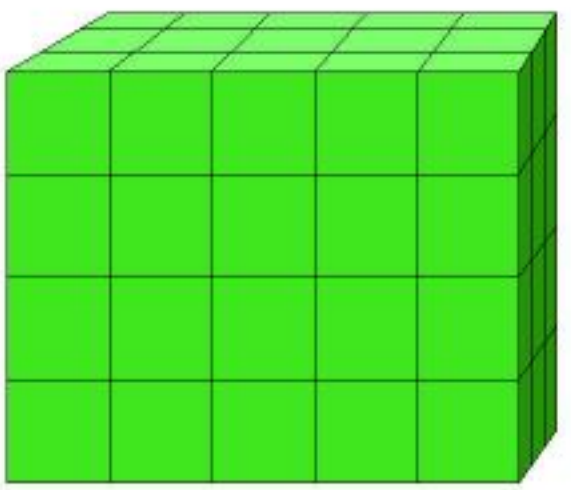
Volume = ☐ cu units

2.



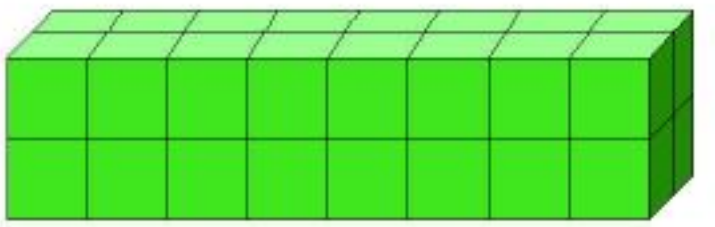
Volume = ☐ cu units

3.



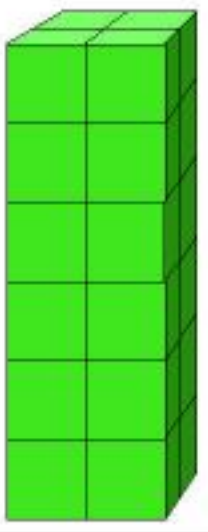
Volume = ☐ cu units

4.



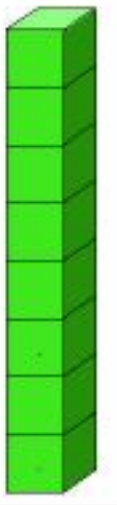
Volume = ☐ cu units

5.



Volume = ☐ cu units

6.



Volume = ☐ cu units

..... Date

..... Teacher's Sign

Up for a challenge?

Solve the following.

1. 750 ml oil is consumed by a family from a one litre container in a few days.

   Quantity left _____ L

2. There is 20 m 30 cm cloth on one roll, and 25 m on another roll.

   Total length _____ m

3. Distance from Sandy's house to his place of work is 25.5 km. One day his car broke down after travelling 11.2 km from his home.

   Distance left _____ km

4. Five equal pieces are cut from a plank whose length is 12.5 m.

   Length of each piece _____ m

5. One Lay's ruffle pack weighs 200 g. Ashish and Sujit together buy 7 such packs.

   Total mass _____ kg

6. One litre of full fat milk contains 0.150 ml of fat. Niti's family weekly consumption of milk is 10 litres.

   Quantity of fat in it _____ L

7. Mr. Ashir travelled by a jet airline which flies at a speed of 600 km per hour and reached Hyderabad in 90 minutes.

   Distance he covered _____ km

8. Six strips each 0.75 m long are joined together to make a welcome arc for the chief guest at a function in Little Professor's preparatory school.

   Total length of the arc _____ m

9. Sam had a 20 L bucket $\frac{3}{4}$ of which was filled with water. The bucket had a small hole and 23 ml of water leaked out of it. How much water was left in the bucket?

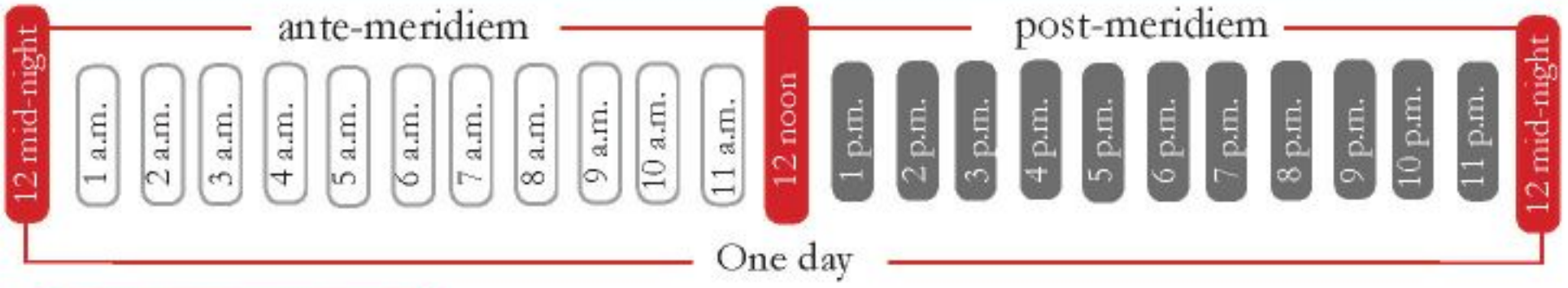
   _____

..... Date ..... Teacher's Sign

11 Time

12-Hour Clock

- A day is divided into two 12-hour periods in the 12-hour clock system.
- Noon and mid-night divide the day in two periods. We say 12 noon or 12 mid-night.



The 24 Hour Clock

- It is used for timetables, for military purposes, in digital clocks, etc. The time of the day is given as hh: mm: ss. Here, hh – stands for hours, mm for minutes and ss for seconds. The day starts at mid-night 0000 hours.

- 00:12 hours → 12 minutes past mid-night or 12:12 a.m.
- 16:30 hours → 4:30 p.m.
- 08:30 hours → 8:30 a.m.

Conversion Table

60 sec = 1 min	365 days = 1 year
60 min = 1 hour	366 days = 1 Leap year
24 hour = 1 day	52 weeks = 1 year
7 days = 1 week	10 years = 1 decade
12 months = 1 year	100 years = 1 century
Note: 365 ÷ 7 = 52 weeks	

..... Date ..... Teacher's Sign

Addition and subtraction

Kajal can solve these addition and subtraction sums in 15 minutes. Can you?

I Add.

1. 1 min 30 s and 40 s.
2. 1 hr 34 min 50 s and 29 s.
3. 3 hr 28 min and 4 hr 22 s.
4. 5 hr 20 min 32 s and 2 hr 15 min 05 s.
5. 4 hr 40 min 10 s and 1 hr 25 min 25 s.

II Subtract.

1. 2 hr 20 min 10 s from 6 hr 24 min 29 s.
2. 4 hr 52 s from 8 hr.
3. 35 min 20 s from 4 hr 14 min 6 s.
4. 2 hr 30 min 39 s from 5 hr 25 min 20 s.
5. 6 hr 40 min from 10 hr 29 min.

..... Date

..... Teacher's Sign

Starting and finishing time

Solve the following.

1. Beena's mother started knitting a sweater on 7th November. She finished knitting it, 30 days later. On which date did she finish?

2. Sita returned from a 38 days holiday on 26th May. When did her holiday begin?

3. Ankit's school Dramatics Day is on July 10th. He wants to start practicing 30 days earlier. When should he start?

4. Anita started practising tabla at 2:15 p.m. and finished 1 hr 25 min later. At what time did she finish?

5. Mithun joined a 3 week-swimming camp that got over 12th October. When did it begin?

..... Date

..... Teacher's Sign

Hours and minutes

Think and solve.

1. A farmer started from home to go to his field at 5:30 a.m. He reached the field after 2 hours 22 minutes. At what time did he reach the field?

2. A teacher taught maths for 1 hour and 45 minutes in class V A and for 45 minutes in class V B. For how long did the teacher teach that day?

3. The Bangalore – Raichur train time table is given. Study the time-table and answer the following questions.

Station	Arrival / Departure	Time
Bangalore main	a	
	d	20:40
Dharmavaram	a	21:55
	d	22:00
Anantapur	a	23:30
	d	23:35
Guntakal	a	02:35
	d	02:55
Raichur	a	05:50
	d	

a. At what time does the train start from Bangalore? .....

b. When does the train reach Raichur? .....

c. For how long does it wait at the Guntakal station? .....

d. Calculate the total time taken for a journey from Bangalore to Raichur? .....

..... Date

..... Teacher's Sign

Up for a challenge?

Read the bus time table given below and answer the questions that follow.

Route	Departure time	Reaching time	Distance
Delhi – Dharmsala	08:00	16:45	539 km
Delhi – Baijinath	09:00	17:24	626 km
Delhi - Chamba	19:00	05:30	513 km
Delhi – Hamirpur	14:00	21:23	472 km
Delhi – Mandi	05:30	12:30	430 km
Delhi – Shimla	11:50	17:50	374 km

1. Write 21:23 as per the 12 hr. clock time.
2. Which of these bus routes requires an overnight travel?
3. Jegan and his friend Allen reached the Delhi bus depot at the same time. Jegan was going to Hamirpur and Allen to Chamba. For how many hours will Allen have to wait if Jegan's bus came one and a half hour late?
4. How long does it take to reach Baijnath from Delhi?
5. Ramesh missed his bus to Shimla by 13 min. At what time did he reach the bus station?
6. The Delhi – Dharmsala route bus got delayed by an hour and started along with another bus. Which bus was it?
7. The Delhi – Mandi bus started at 06:10. If the time taken to travel remains the same, what time will the bus reach Mandi?
8. A man travelled from Delhi to Shimla and after spending 4 hours there, travelled back to Delhi. Calculate the total time taken for his trip.
9. Find the estimated speed of the Delhi – Baijinath bus.
   Hint: Speed = Distance/ Time

..... Date

..... Teacher's Sign

12 Money

Profit and Loss

We all need money for our daily use to buy things. Shopkeepers buy from wholesale dealers and sell goods to us for their livelihood. The money which a shopkeeper pays to buy goods is called cost price and the amount for which he sells it is called selling price. If the selling price is more than cost price then it is a profit or gain. If the selling price is less than its cost price then it is a loss.

Do you remember?

Cost Price [C.P.]	Selling Price [S.P.]
The price at which an article is purchased	The price at which the article is sold
Profit or Gain	**Loss**
If S.P. is greater than C.P., the seller is said to have a profit or gain.	If S.P. is less than C.P., the seller is said to have incurred a loss.

Important Formulas

1.	Gain = S.P. – C.P.
2.	Loss = C.P. – S.P.

..... Date

..... Teacher's Sign

Cost price and selling price

1. A dealer bought an old camera for ₹ 1050. He made a profit of ₹ 250 by selling it. Find the selling price. .....

2. Ravi had bought an old book for ₹ 38. Its original cost was ₹ 50. How much money did he save by buying an old book? .....

3. If a cycle was sold for ₹ 8200 at a loss of ₹ 2100, what was the cost price of the cycle? .....

4. Mayur sold an old mobile phone for ₹ 3600 and earned a profit of ₹ 430. Find the amount at which Mayur purchased the mobile phone. .....

5. Sonali bought a pair of sandals for ₹ 625 and sold it to Monica at a profit of ₹ 85. Find the selling price. .....

6. Fill in the blanks.

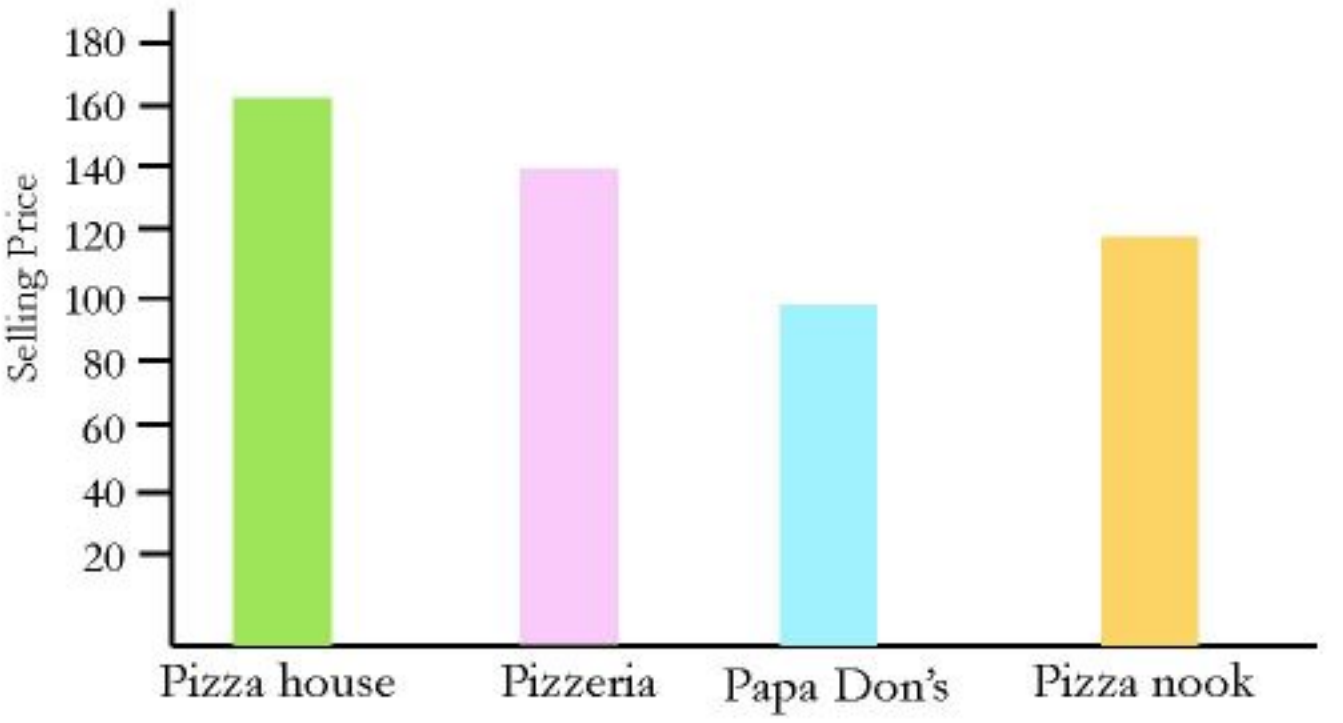
S.No.	Cost Price	Selling Price	Profit	Loss
1.	₹180		₹ 30	
2.		₹ 2150		₹ 145
3.	₹ 7200	₹ 7800		
4.	₹ 1200		₹ 180	
5.		₹ 790		₹ 90
6.	₹ 4900		₹ 1050	
7.	₹ 340		₹ 80	
8.		₹ 17850		₹ 2500
9.	₹ 38	₹ 49		
10.	₹ 1075	₹ 925		

..... Date

..... Teacher's Sign

Profit and loss

Mr. Brown runs a food court at Maroons Mall. He buys pizzas from Pizza house, Pizzeria, Papa Don's and Pizza nook. The cost price of a pizza of every brand is the same that is ₹ 120. He sells them at different prices. The selling price is given below in bar graph.



1. Complete the following table.

S. No.	Brand	Profit (₹)	Loss (₹)
	Total		

2. Which pizza gives him maximum profit?

3. How much he earns total profit?

4. On which pizza does he make neither profit nor loss?

..... Date

..... Teacher's Sign

Estimation in daily life

Answer the following questions.

1. Ajay wants to give pencil boxes as return gifts on his birthday to six of his friends. If each box costs ₹ 35, how much will he have to spend? .....

2. Janak will have to buy 3 special brushes for his art exam. If each brush cost ₹ 18.75, how much will Janak have to pay? .....

3. One litre of milk costs ₹ 22, what is the cost of milk purchased for one week? .....

4. The cost of 1 newspaper on a week day is ₹ 2.50 and weekend i.e., Saturday and Sunday is ₹ 3.50. What would be the paper bill if there are 4 weeks in the month? .....

5. A picnic to Wonderland for 35 students cost ₹ 15,750. How much does it cost for 1 student? .....

6. If the cost of 5 soaps is ₹ 115, how much does each soap cost? .....

7. The cost of a 100 page notebook is ₹ 25. If Ratan needs 1 dozen of such notebooks then what will be the cost? .....

8. Remo wants to distribute chocolates to a class of 45 students. The cost of 1 chocolate is ₹ 2. He paid ₹ 100 to the shopkeeper. How much money would the shopkeeper give him back? .....

..... Date ..... Teacher's Sign

Up for a challenge?

Kishore is working at his uncle's shop as a trainee. His first assignment is to make a bill.

1. Complete the bill for him?

S. No	Items	Quantity	Rate	Amount
1.	Biscuits	2 pkt.	₹ 20.50	
2.	Chips	1 pkt.	₹ 20.00	
3.	Cola	1 bottle	₹ 55.00	
4.	Bread	1 pkt.	₹ 17.50	
5.	Cake	5 pieces	₹ 8.50	
			Total	

2. What is the total amount of the bill that Kishore made?
3. Kishore bought goods worth ₹ 980 and sold them for ₹ 1000. Find his profit.
4. Kishore's uncle is angry because he sold a cooler worth ₹ 7000 at a loss of ₹ 1800. For how much did he sell the cooler?
5. If half a dozen of quarter plates cost ₹ 456, how much will 10 of the such plates cost?
6. Sita bought 6 dozens of bangles at ₹ 30 per dozen from the shop. If she gives ₹ 200 to the shopkeeper, then how much money will she get back as change?

..... Date

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13 Patterns

Predicting a pattern

Little Raghav woke up in the morning and saw his mother making a 'Rangoli' design at the doorstep. He could guess the pattern his mother was going to fill in next.
Can you? We see different kinds of patterns around us, every day. Learning patterns help us to predict what is about to occur and discover new things.

Common number patterns

Square Sequences : The sequence is continued by squares of numbers.
Example. 1, 4, 9, 16, 25 ...

Cube Sequences : The sequence is made by cubes of numbers.
Example. 1, 8, 27, 64, 125 ...

Arithmetic Sequences : The pattern is continued by adding some number.
Example. 4, 7, 10, 13, 16... (Adding 3)

Fibonacci sequence : The sequence is found by adding the two numbers before it. Example. 0, 1, 1, 2, 3, 5, 8...

Geometric Sequences : The sequence is made by multiplying by some value each time.
Example. 4, 16, 64, 256, 1024... (Multiplying by 4)

Do you know?

Leonardo Fibonacci, the Italian mathematician after whom the Fibonacci sequence is named, did not discover it. The sequence was known to Indian mathematicians as early as the 6th century.

..... Date ..... Teacher's Sign

Number patterns

I Study the pattern and complete the sequences.

1.	1	8	15	22			
2.	1	2	4	8			
3.	1	3	6	10			
4.	12	23	34	45			
5.	9	129	249	369			

II Study the pattern and fill the missing numbers.

				1					
			1		1				
		1				1			
	1		3		3		1		
		1		4				1	
	1				10				5		
		6		15						

Date ..... Teacher's Sign .....

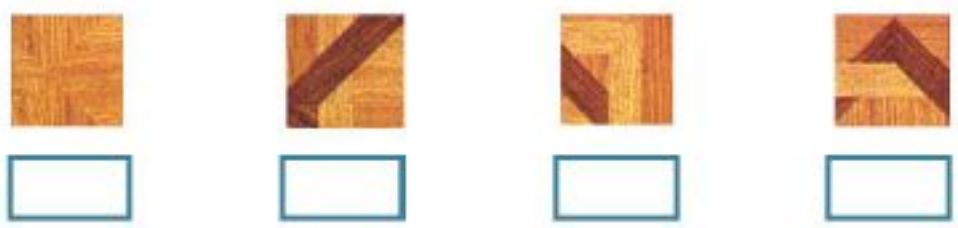
Tile pattern and colouring

I Choose the correct tile from the options given.

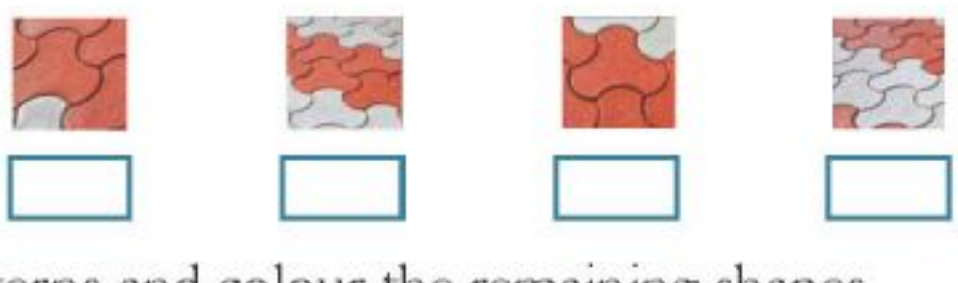
1. 

2. 

3. 



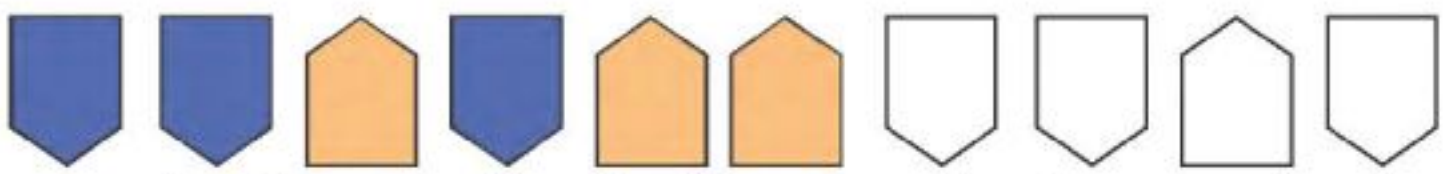
4. 



II Observe the colour patterns and colour the remaining shapes.

1. 

2. 

3. 

4. 

5. 

..... Date

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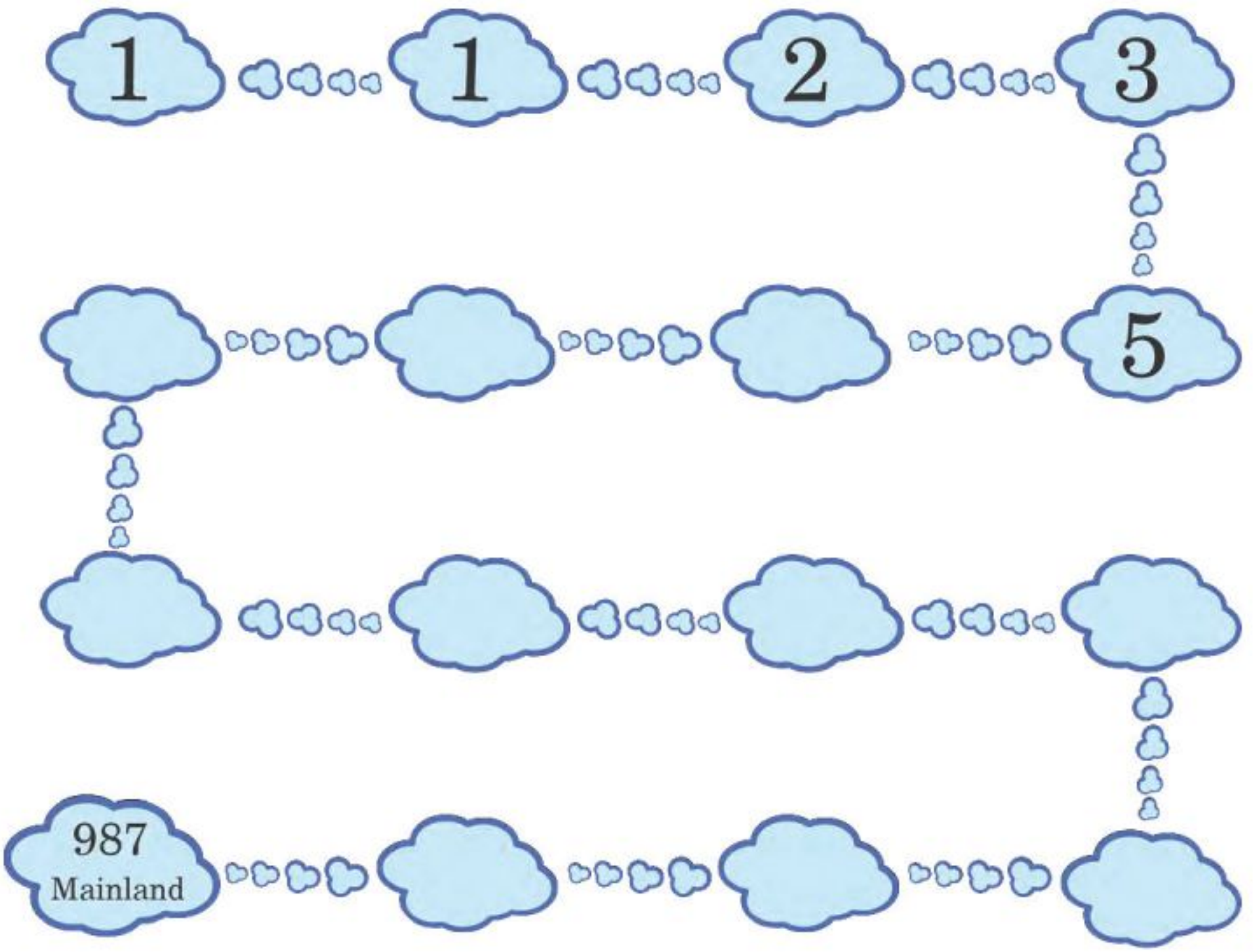
Fibonacci sequence

Aladdin had a magic lamp. Whenever he rubbed it, a genie would appear and grant him a wish. Once Aladdin was marooned on an island and had no means to escape. Luckily he had the lamp with him. But this time the genie laid a condition. He would build a bridge to the mainland only if Aladdin completed the Fibonacci sequence. Can you help Aladdin?



Date ..... Teacher's Sign .....

Calendar fun

Given below is the calendar for June 2014.

2014			JUNE			2014
Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Can you find a short-cut to find the total of the highlighted numbers? Here is a way

- Take the smallest number in the 3 × 3 square (4)
- Add 8 to it (4 + 8 = 12)
- Multiply the result by 9 (12 × 9 = 108)

Check if that's the answer you are looking for!

1. Take another set of 3 × 3 numbers in this calendar and see if it works!
2. Take a calendar of any month and challenge your friends.
3. Now answer these questions:

(a) What would be the date on the second Sunday of February 2014?

(b) How many Saturdays would be there in the month of December 2013?

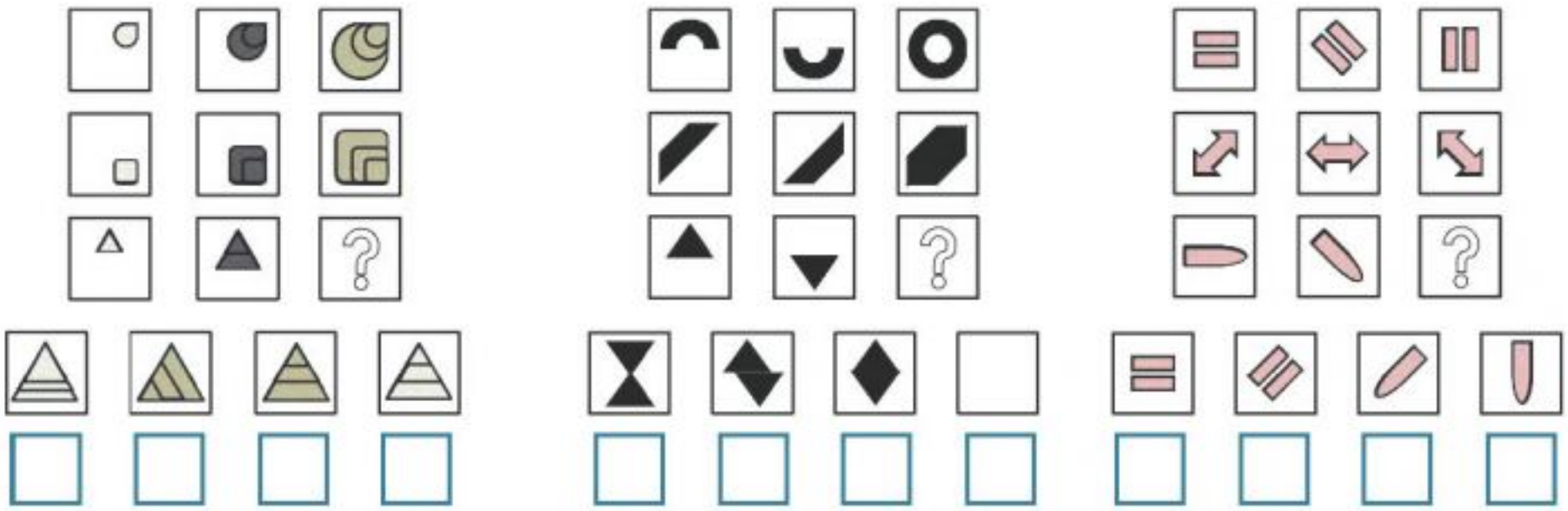
(c) Reba's birthday is on February 29th. Would it be possible for her to celebrate it on that day in the current year?

(d) State the reason for your answer to question c.

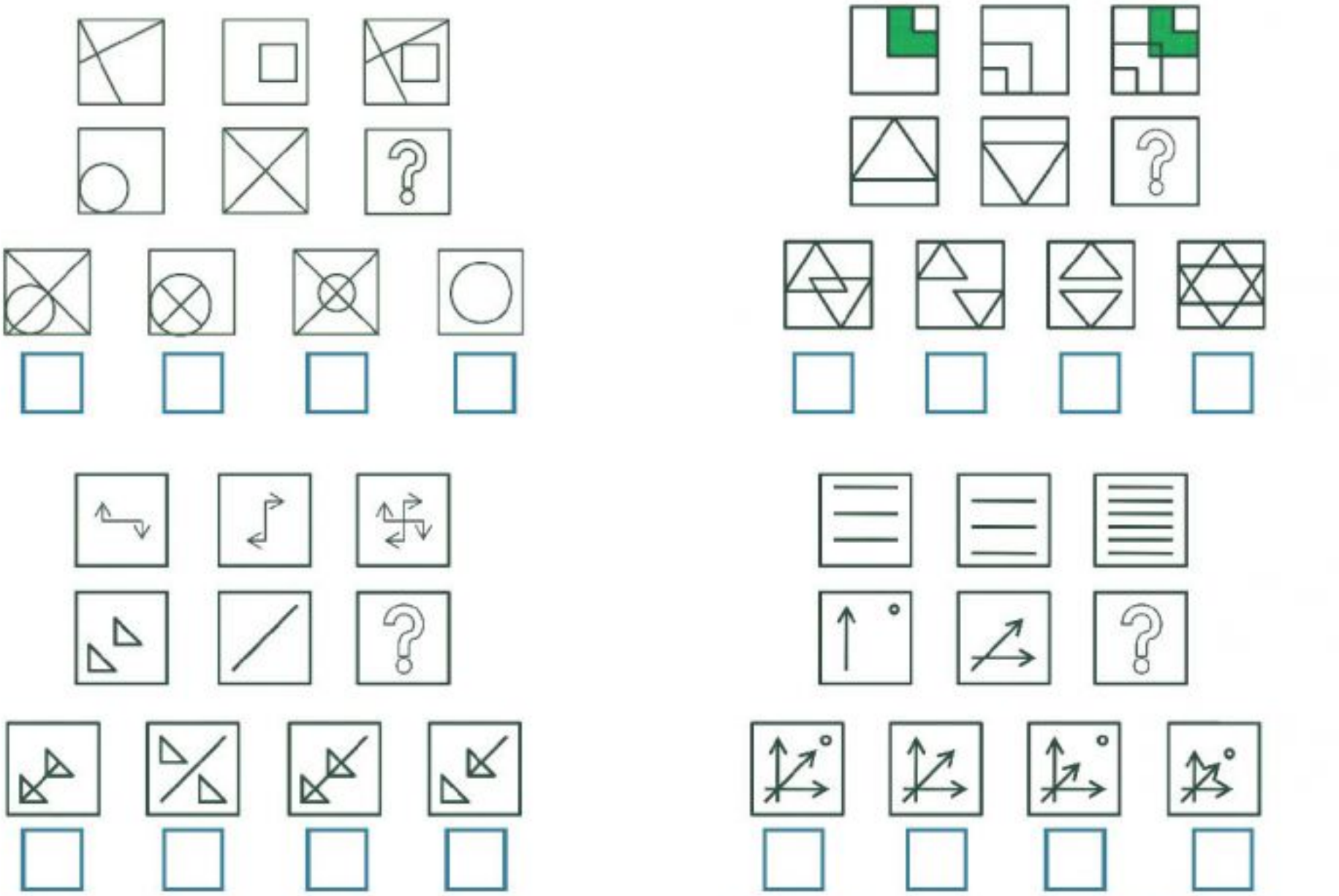
Date ..... Teacher's Sign .....

Reasoning by analogy

I Observe the pattern in the first two rows and tick the one which would fit in the blank space.



II Observe the pattern and put a tick mark on which it would fit in the blank space.

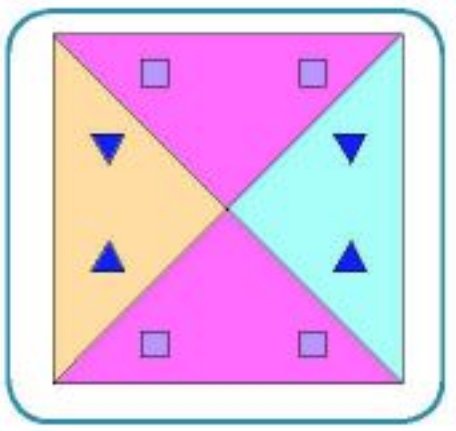


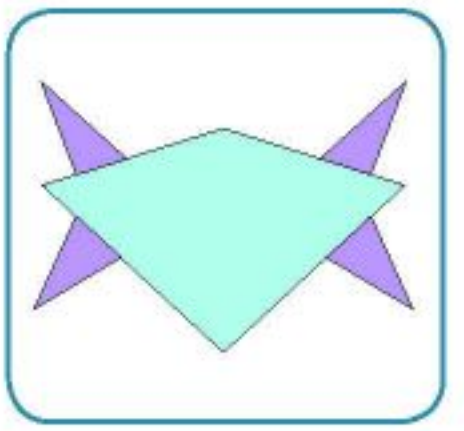
Date ..... Teacher's Sign .....

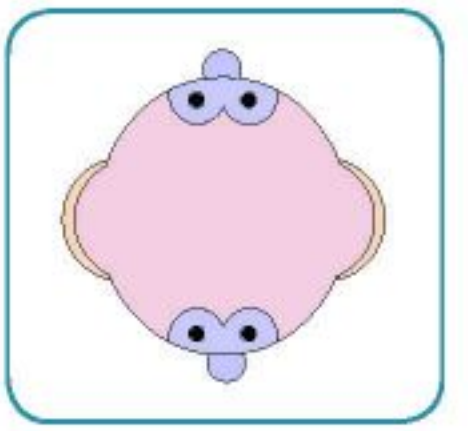
Identifying the line of symmetry

I Complete the pictures

II Draw the line(s) of symmetry for the following pictures

1. 

2. 

3. 

4. 

5. 

6. 

III Which of the capital letters of the English alphabet
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
will have

1. More than one line of symmetry.
2. No lines of symmetry.
3. Only one line of symmetry.

..... Date

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Up for a challenge?

I Extend the pattern by rotating the letter 90° clockwise at each step.

1.	J				
2.	L				
3.	M				
4.	P				
5.	W				

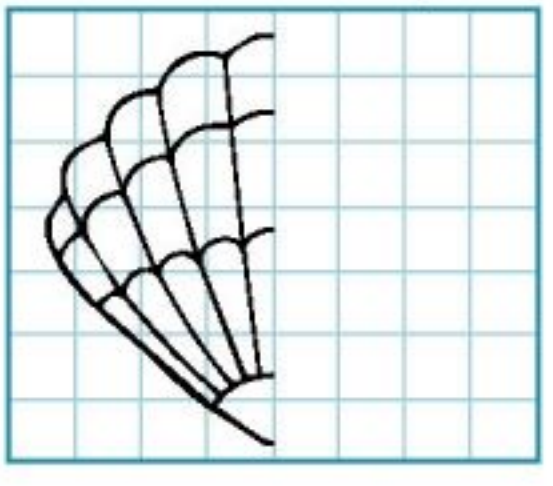
II Add two more numbers to complete the sequence.

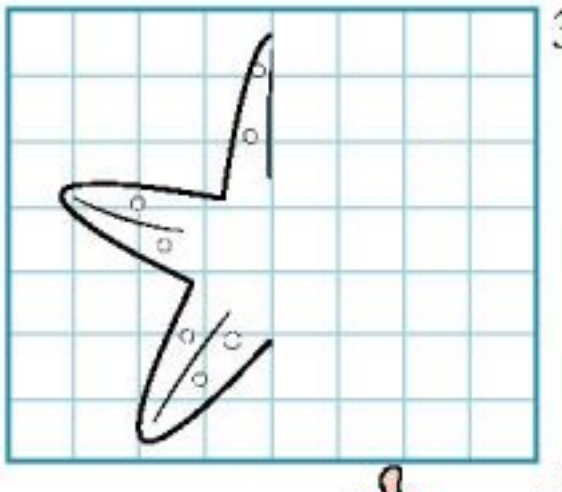
1.	56	50	46		
2.	25	50	75		
3.	33	65	97		

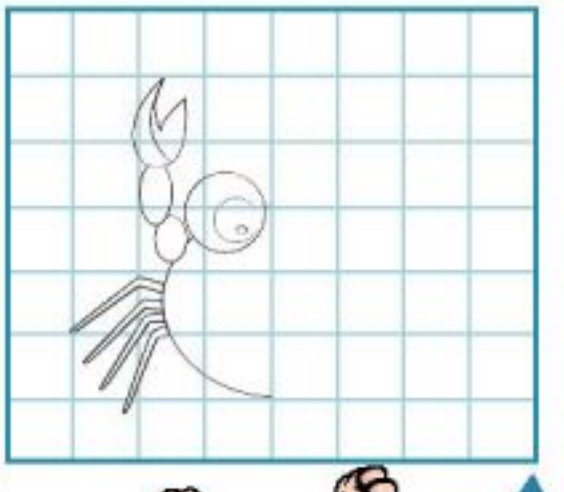
III In a certain code language, A = Z, B = Y, C = X and so on. Can you follow the code and find out the name of this famous book?

"TFOOREVIH GIZEVOH"

IV Dia is on an under-sea adventure. But she cannot stop thinking about symmetry of the objects she sees even under the sea!
Draw the lines of symmetry of these sea animals.

1. 

2. 

3. 

..... Date

..... Teacher's Sign

14 Perimeter and area

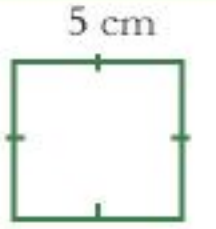
Perimeter

Perimeter (P) :

Sum of length of all sides of a figure is called its perimeter.
Look at perimeter of some geometrical figures.

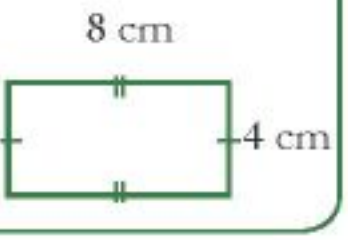
Perimeter of a square

A square has all four side equal to each other. So the perimeter of a square = 4 × side.



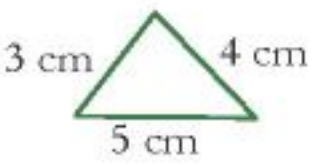
Perimeter of a rectangle

A rectangle has both the length and the breadths equal to each other. So the perimeter of a rectangle = 2 × (length + breadth).



Perimeter of a triangle

A triangle has three sides. So sum of all three sides of a triangle is its perimeter.



Perimeter of an irregular shape

We use thread to measure the perimeter of such figures. We cover the shape by thread along the boundary by starting with any point on the boundary till we reach back to the same point. Now remove it from the boundary of shape and measuring its length by a ruler will give you the perimeter.

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Area

Area (A) :

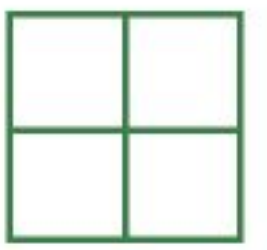
Area is the region enclosed within the boundary of a closed figure measured.
Area is the number of square units that are required to cover a plane figure.

Area of a rectangle

This rectangle is filled with six 1 cm square pieces. Total number of small squares required to cover this particular rectangle = 3 + 3 = 6
We say the area of the rectangle = 6 square unit.
There is a shorter way to find area instead of counting squares. Since each small square is 1 cm in length and there are 3 small squares to cover the length, so the length of the rectangle = 3 cm and breadth = 2 cm.
Area of the rectangle = $3 \times 2 = 6$ square cm.

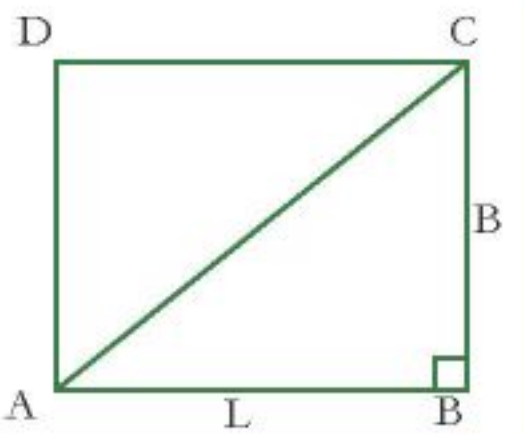
Area of a square

Area of a square = side × side = $2 \times 2 = 4$ square cm
Therefore unit for measurement of area is 1 square cm written as 1 sq cm or 1 cm^2.



Area of a right triangle

Area of a right triangle can be found by drawing a diagonal across the rectangle and dividing it into two equal parts(triangles).

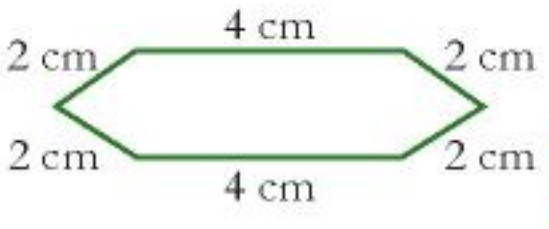


Area of a right triangle = $\frac{1}{2}$(length × breadth).

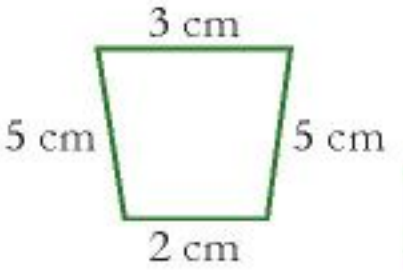
Finding perimeter

I Find the perimeter of the following figures.

1.

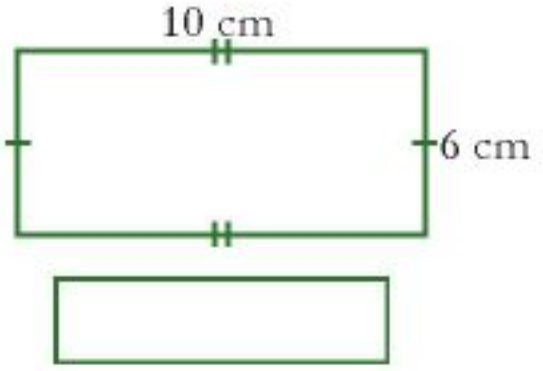


2.

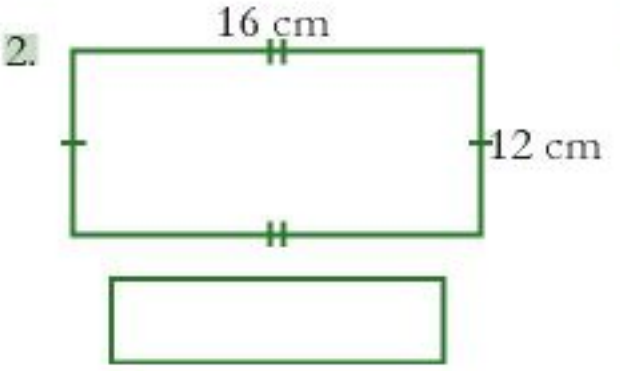


II Find the perimeter of the following rectangles.

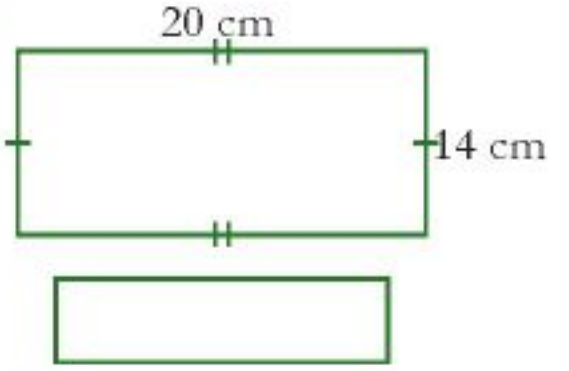
1.



2.

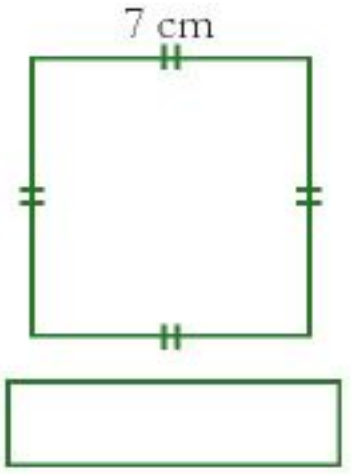


3.

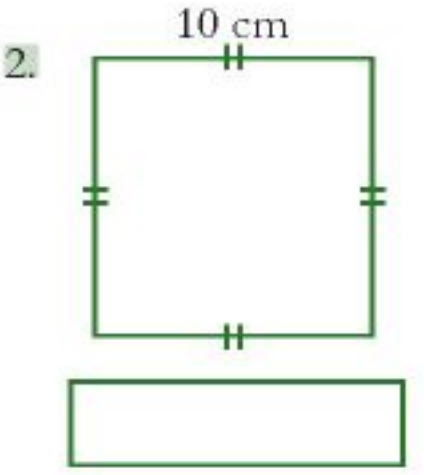


III Find the perimeter of the following squares.

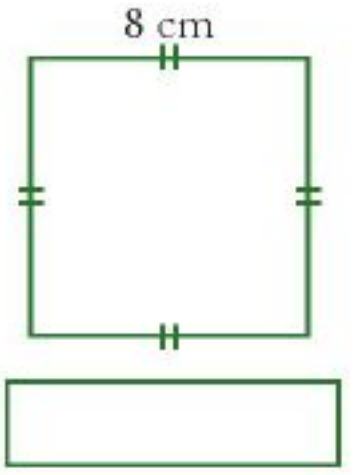
1.



2.

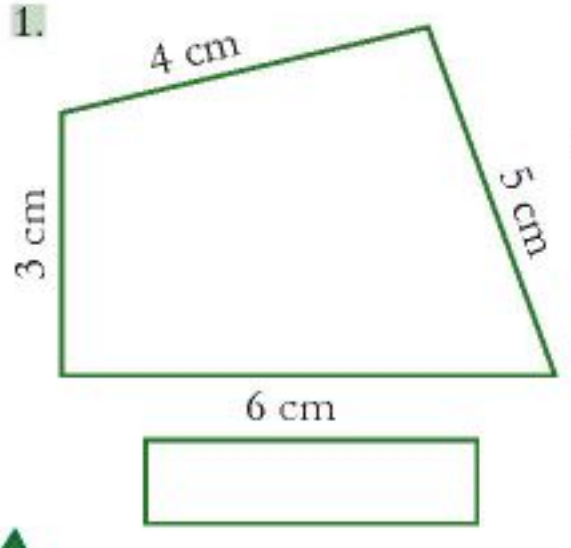


3.

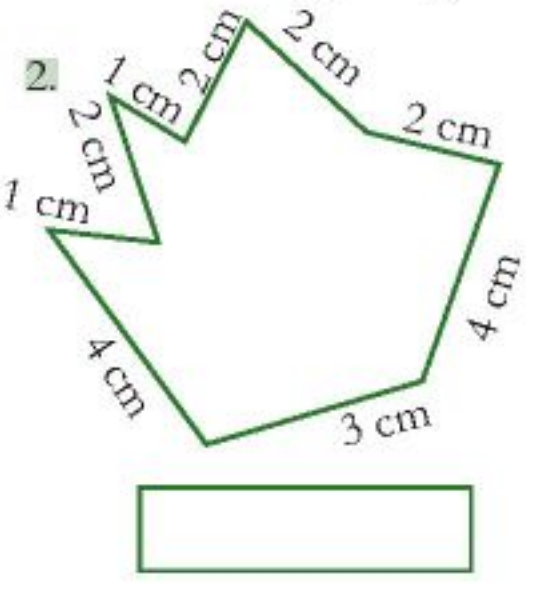


IV Measure the perimeter of the following irregular shapes.

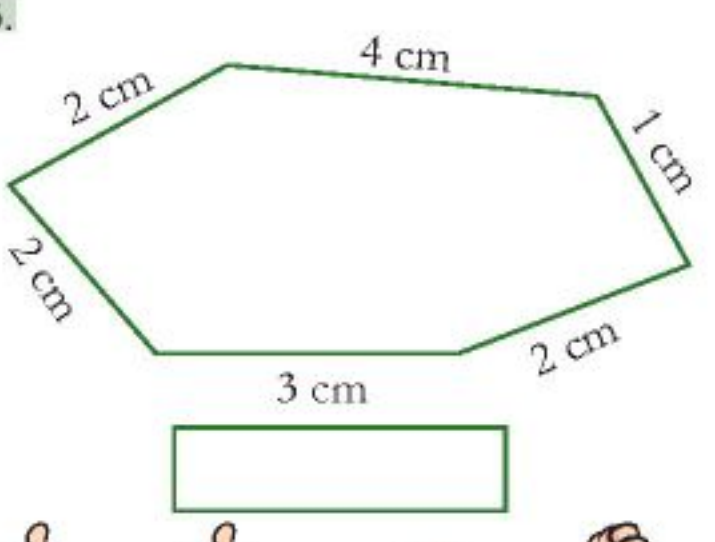
1.



2.



3.



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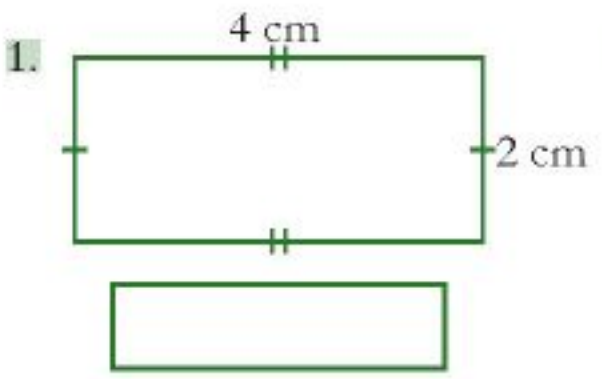
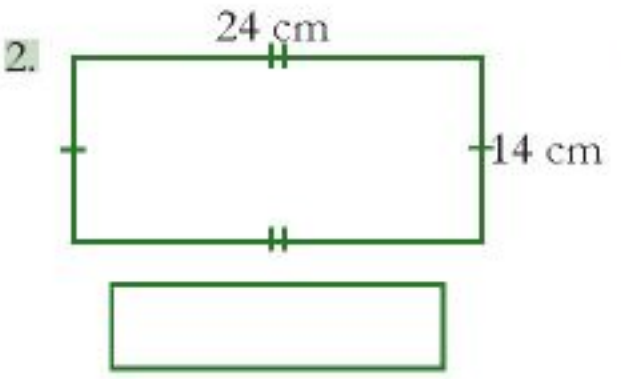
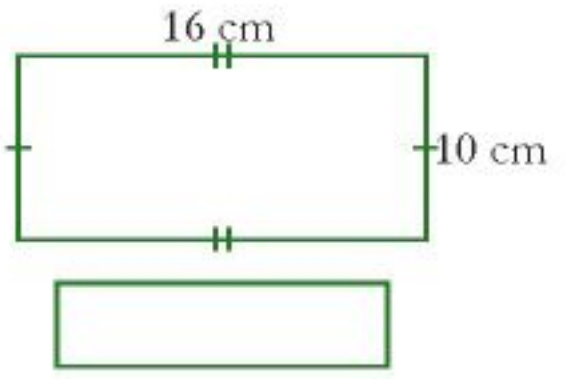
Finding area

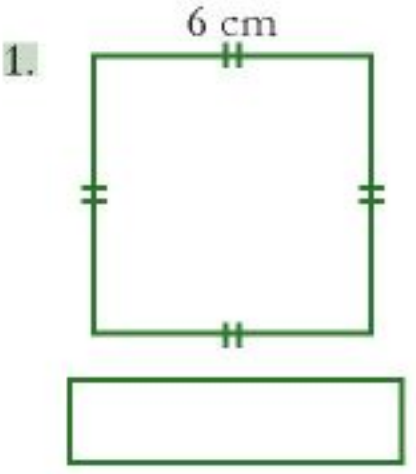
I Find the area of the following rectangles using formula.

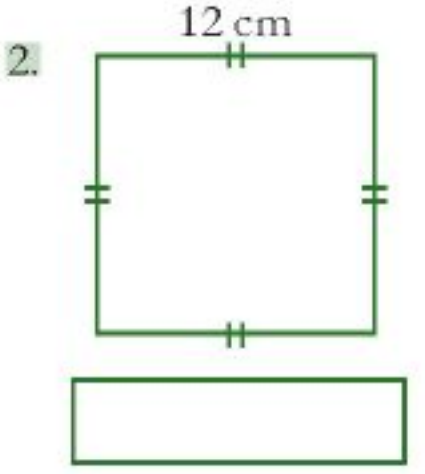
1. 

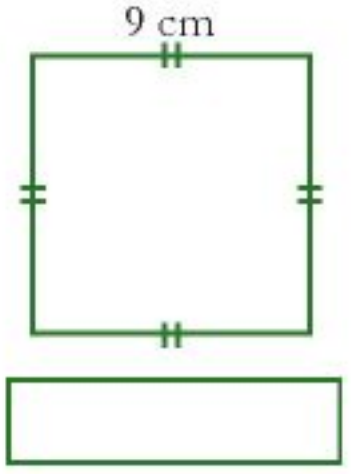
2. 

3. 

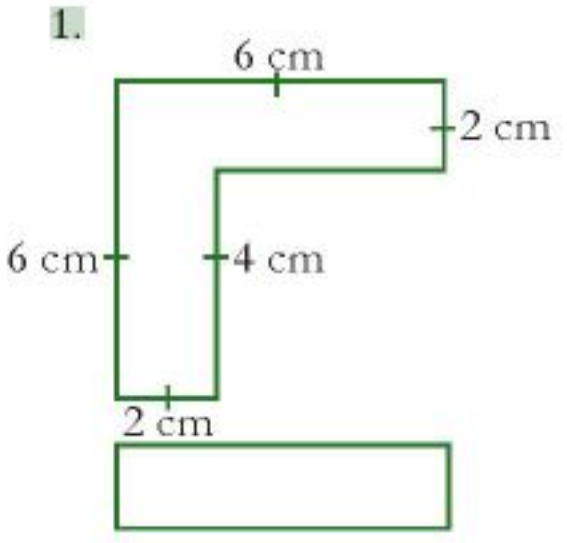
II Find the area of the following squares using formula.

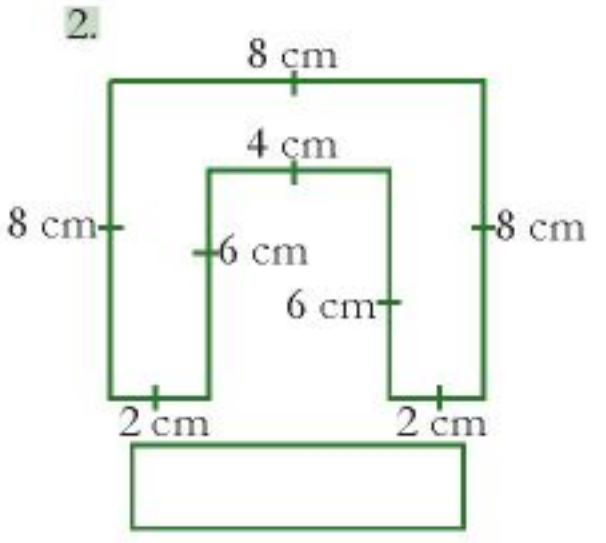
1. 

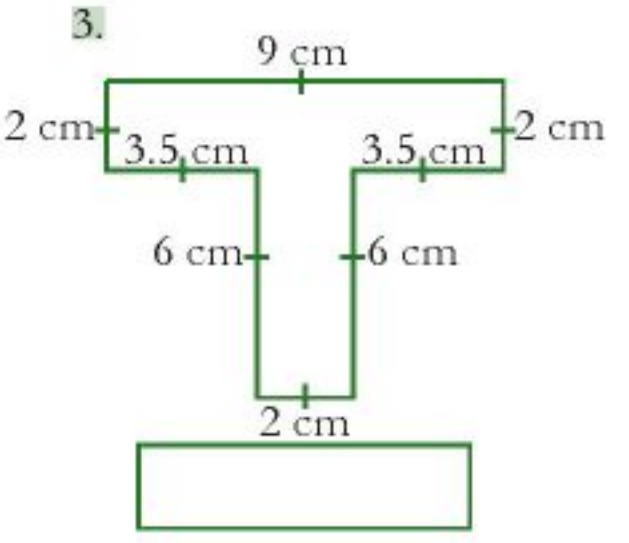
2. 

3. 

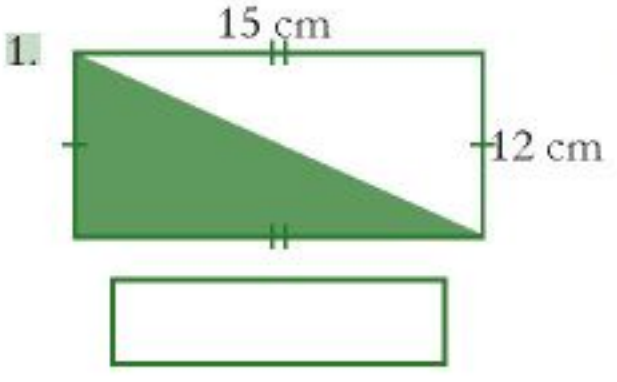
III Find the area of the following figures.

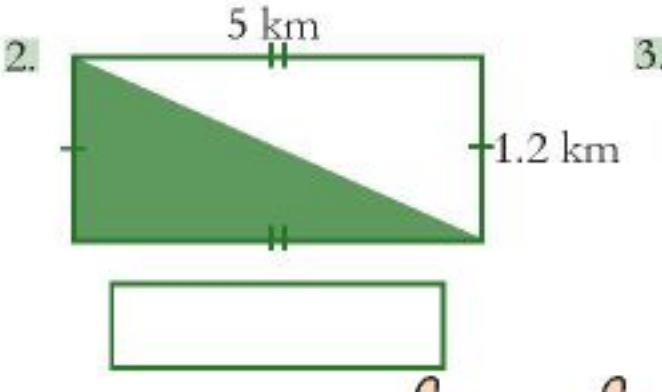
1. 

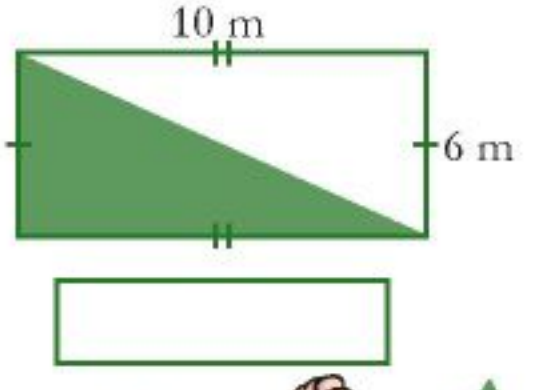
2. 

3. 

IV Find the area of the shaded right triangles:

1. 

2. 

3. 

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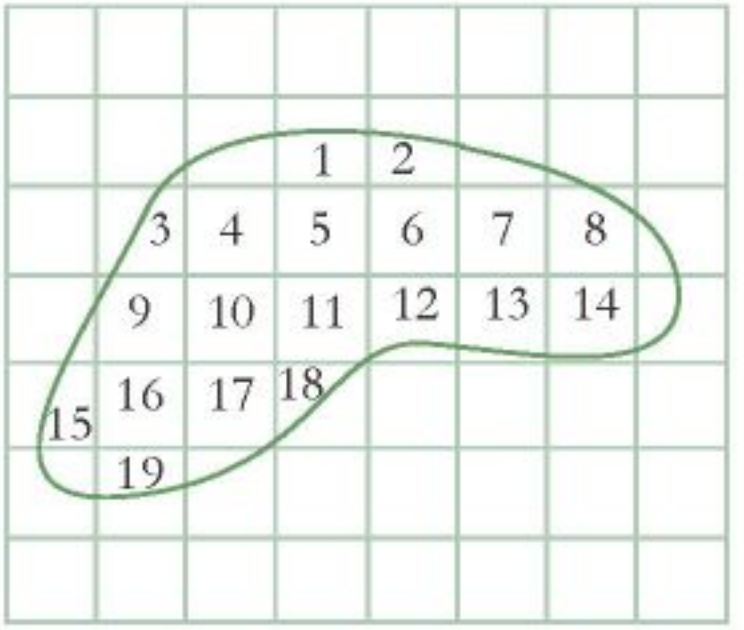
Area of irregular figures

Area of irregular figures cannot be found by any formula. For this we need to count the number of squares that the irregular figure occupies.

- Count the number of full squares occupied by the figure.
- Count the number of half squares as full.
- Count the number of more than half squares as full squares.
- The squares that are less than half are not considered.
- Add up all the squares that you have counted.

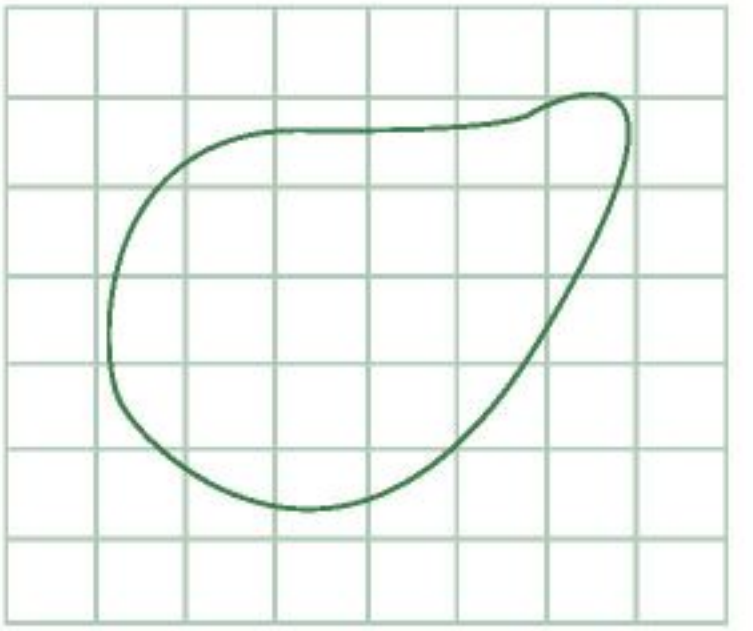
I Find the area of the following irregular figures. One has been done for you.

1.

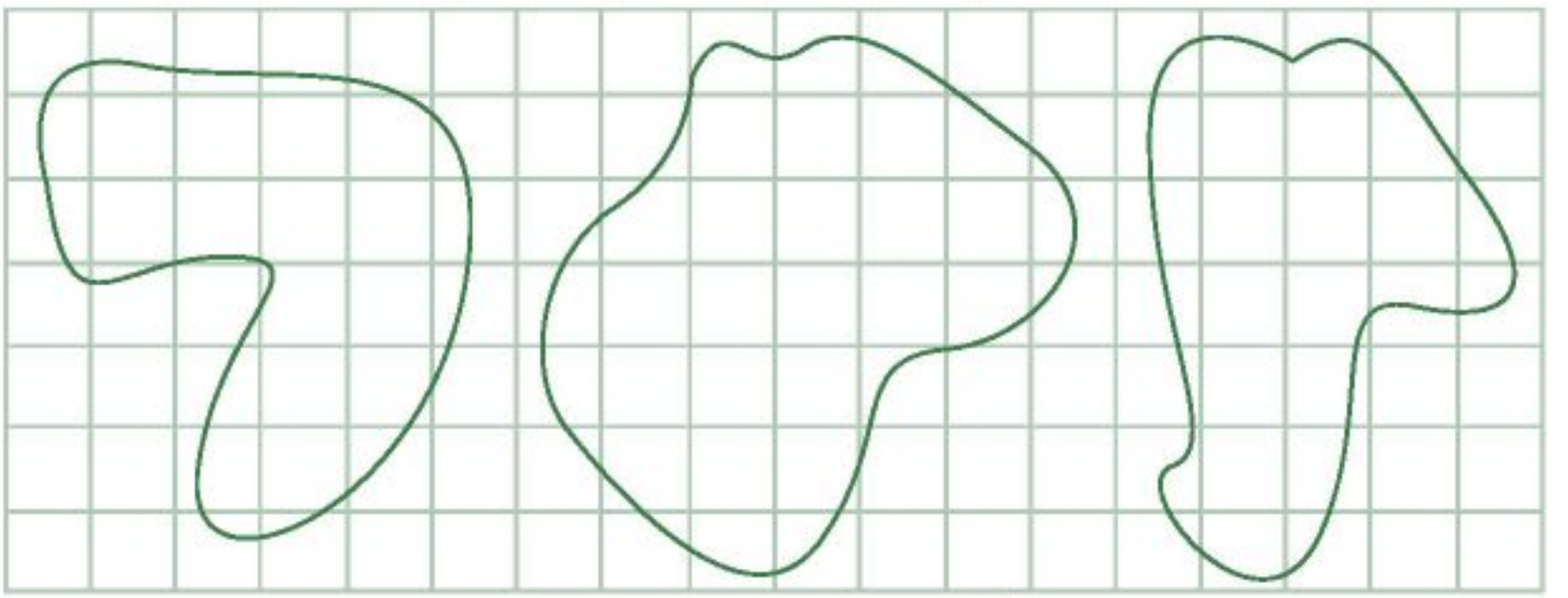


19 Square Unit

2.



II Find the area of the irregular figures by counting the number of squares.



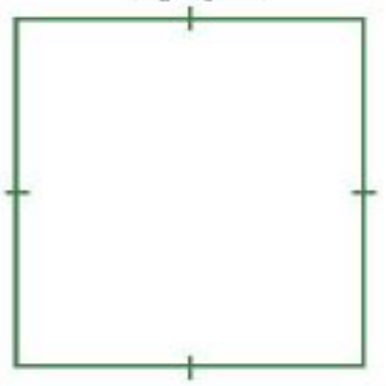
..... Date

..... Teacher's Sign

Up for a challenge?

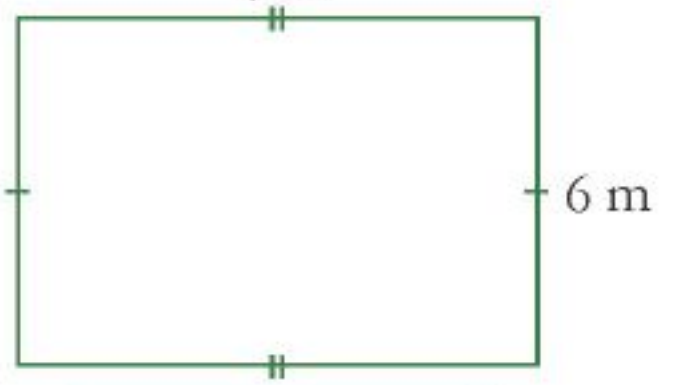
I A building company has hired Mr. Biswas to find the perimeter and area of the following shapes. Help him to find these.

1.



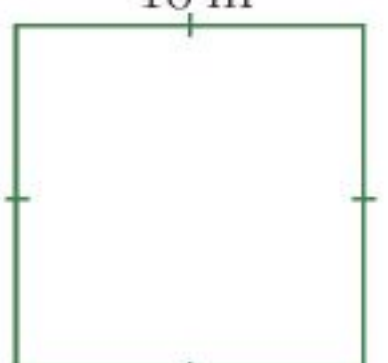
Perimeter =
Area =

2.



Perimeter =
Area =

3.

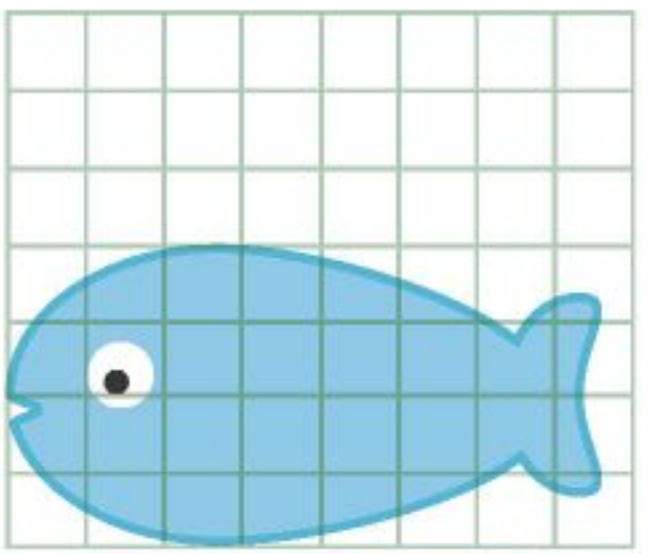


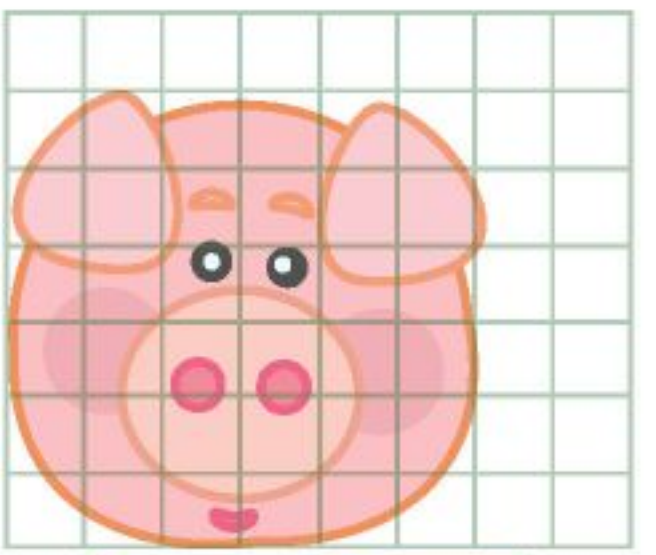
Perimeter =
Area =

4.

Perimeter =
Area =

II Find the area of these irregular shapes.





III Mr. Biswas rode along the boundary of a square field with side 60 m and reached home. What is the distance between his office and home?

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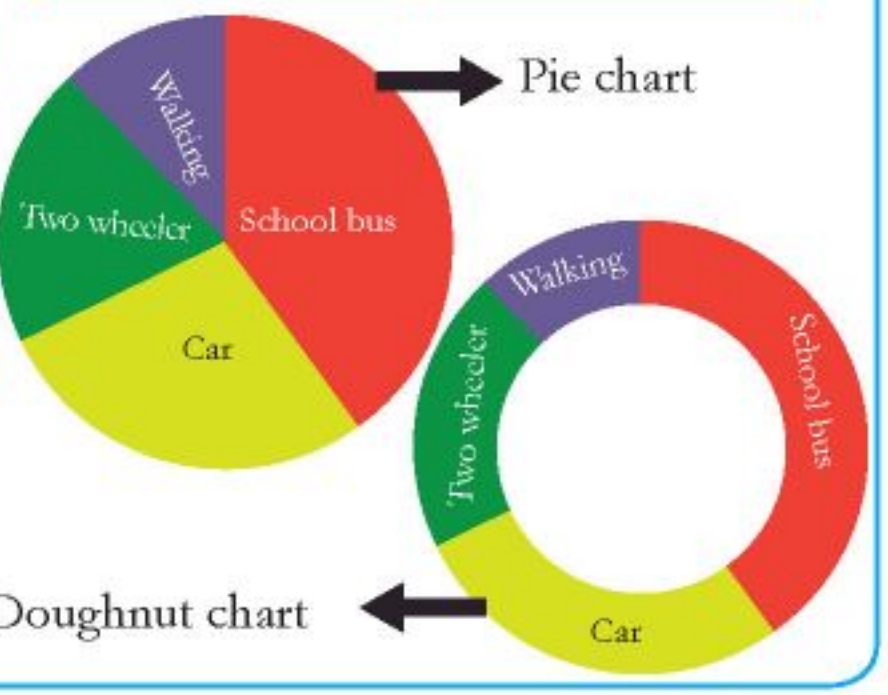
15 Data handling and pictograph

Tables, pie charts and doughnut chart

After the zoo visit, all the children went back home by different means of transport. The class teacher made a table to be sure that no child was left behind at the zoo. There were 25 children in the class.

Means of Transport	No. of Children
School bus	10
Car	7
Two wheeler	5
Walking	3



Do you know?

Tally marks used in Korea, China, Japan and Taiwan look like this!

Tally Marks

Tally marks are an easy way to keep track of numbers in groups of five. The most common tally marking system is like this.

Common error while using tally marks

While drawing the tally marks, do not draw five standing lines before crossing it. That would make it a group of six!

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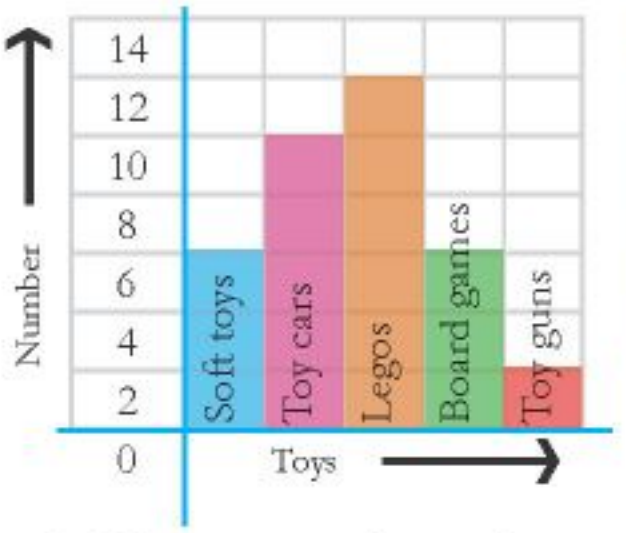
Tables and bar graph

I Rahul is letting us take a peek into his toy cupboard. Study the bar graph and complete the table given below.

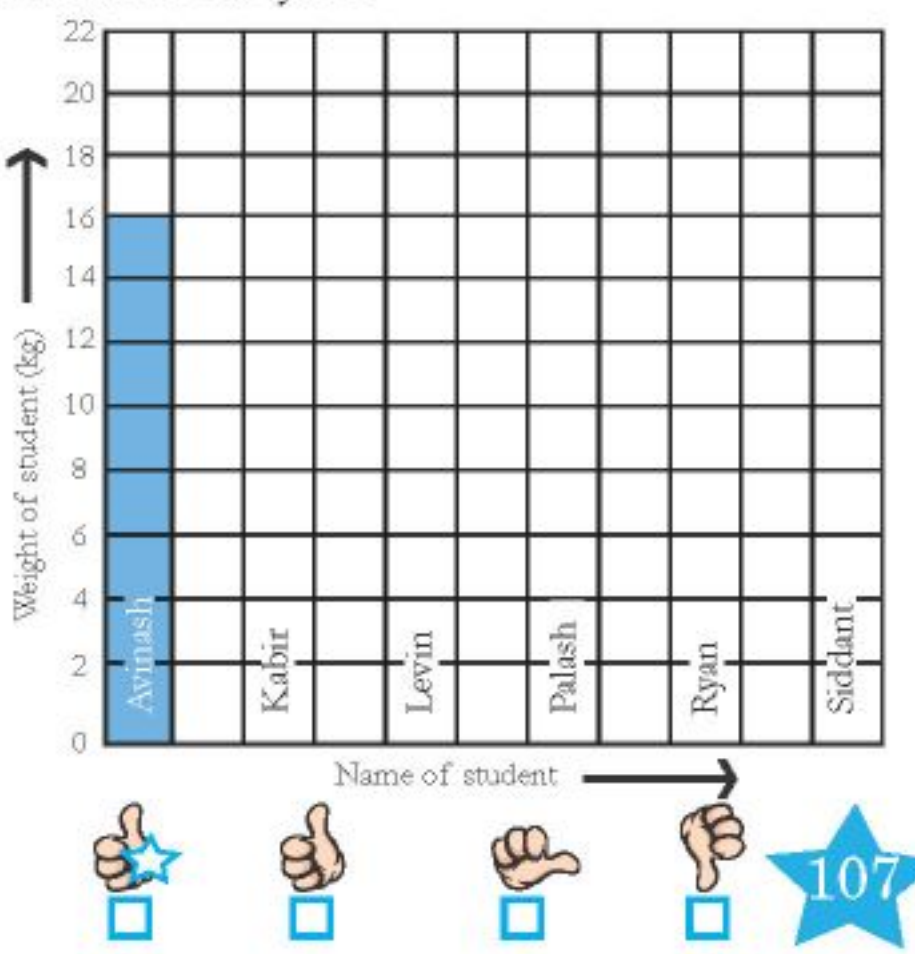


S.No	Toys	Number
1.	Soft toys	
2.	Toy cars	
3.	Legos	
4.	Board games	
5.	Toy guns	

1. How many board games does Rahul have? ☐
2. What kind of toys does Rahul have the least? ☐
3. Rahul has equal number of ☐ and ☐.
4. Rahul has ☐ toy cars.
5. How many toys are there in Rahul's cupboard? ☐
6. What is the difference between the number of toy cars and toy guns in Rahul's cupboard? ☐

II The table given below shows the weights of six children in a class. Draw a bar graph to represent the table. One has been done for you.

S.No	Names	Weight in kg
1.	Avinash	16
2.	Kabir	12
3.	Levin	20
4.	Palash	20
5.	Ryan	18
6.	Siddant	22



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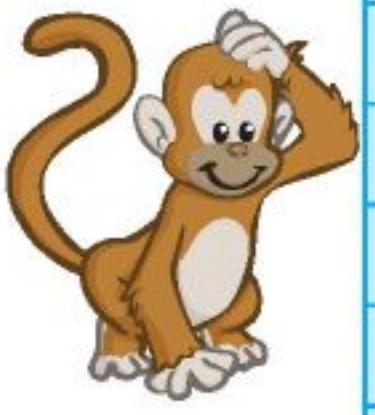
Tally marks

I On a winter morning Bella sat near her window and saw people going on the road wearing different coloured sweaters. For fun, she noted the colours with their first letter. Draw tally marks for each colour.

R R W B B B Y Y R R R W G G G P P R
W G Y Y B Y W G Y R P W P G G R G G
Y Y G B W B B B G G R R

S.No	Colour	Tally
1.	Red	
2.	Blue	
3.	Yellow	
4.	Green	
5.	Purple	

II A survey was conducted to find out the utility of the neighbourhood park. The results are listed in this tally table.



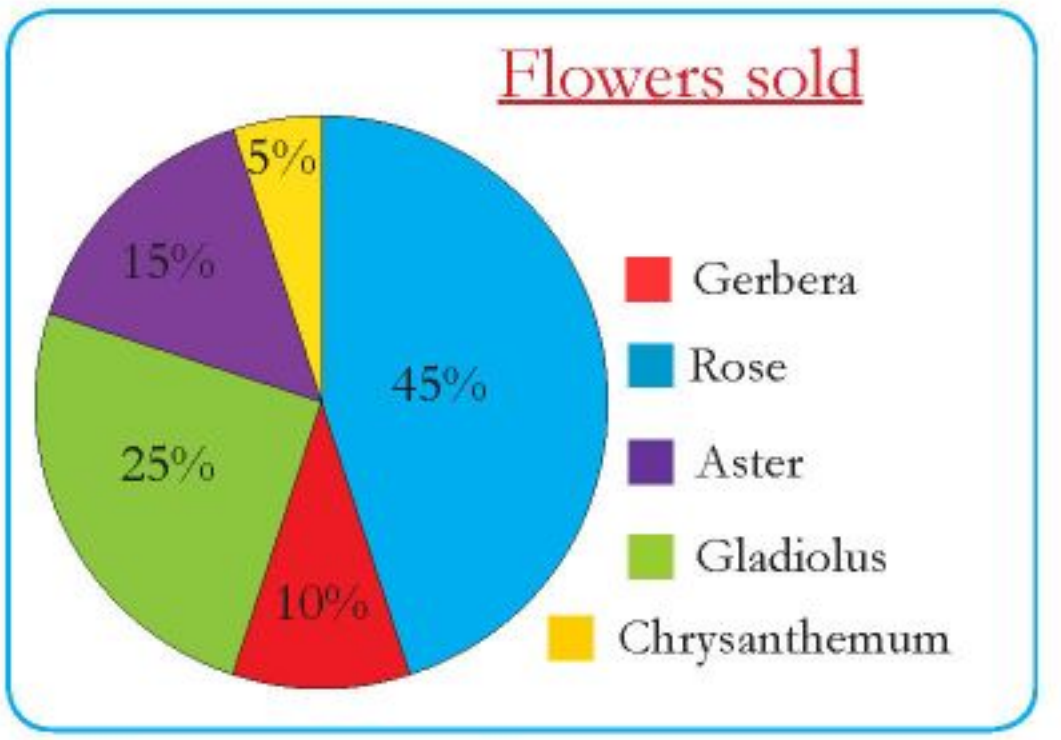
S.No	Activities	Number of People
1.	Meditation	𝍸 𝍸 𝍸 𝍸
2.	Exercise	𝍸 𝍸 𝍸 ||
3.	Play	𝍸 𝍸 𝍸 𝍸 𝍸 ||
4.	Study	𝍸 ||
5.	Meet friends	𝍸 𝍸 |||

1. How many people go to the park to meet their friends? ☐
2. How many people play at the park? ☐
3. For what purpose the park is used the least ? ☐
4. How many people come to the park to meditate and exercise? ☐
5. What is the total number of people who come to the park? ☐

..... Date ..... Teacher's Sign

Pie graph

I A group of children volunteered to sell flowers at a fund raising event. Use the pie graph to answer the questions.



1. Which flower did the most number of people prefer?

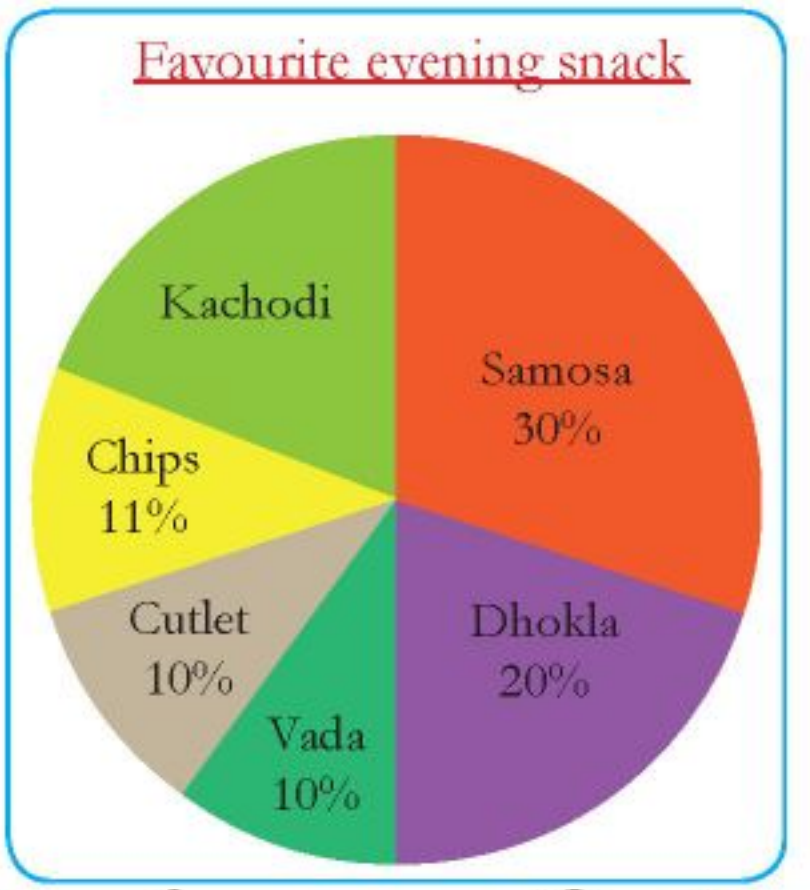
2. Which flower did the least number of people prefer?

3. What percentage of people preferred either gladiolus or aster?

4. If the total number of flowers were 200, how many Gerbera's were sold?

5. If 5% of Chrysanthemum were replaced by Aster, what would be the percentage of Aster sold?

II Study the given pie graph and answer the question.



1. Calculate the percent of people preferred kachodi.

2. Which snack did most of the people prefer?

3. Which of the two snacks did about half of the people prefer?

4. What percent of people preferred either kachodi or cutlet?

5. Which of the three snacks did about half of the people prefer?

..... Date

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Pictograph

I Susan likes to count migrating birds during the month of September. She recorded the number of birds she counted during a week in the pictograph below.

 = 5 birds

Sunday	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

1. Which day did she count the most number of birds? ☐
2. Which day did she count the least number of birds? ☐
3. How many birds did she count during the weekend? ☐
4. How many birds did she count on Monday? ☐
5. How many birds did she count on the fourth day of the week? ☐

II Baker Steve makes cakes on order. Here is his record of cakes sold during 5 months.

August	
September	
October	
November	
December	

 = 3 cakes

1. How many cakes did he sell in September? ☐
2. How many cakes did Steve sell during the tenth month of the year? ☐
3. Which was the most profitable month for Steve? ☐
4. Which was the least profitable month for Steve? ☐
5. How many cakes did Steve sell during the 5 months altogether? ☐

..... Date ..... Teacher's Sign

Up for a challenge?

Rex decided to have fun by making pictograms and tally charts during the sports day. Study the pictograph and answer the following.

Athletics	
Javelin throw	
Skating	
Swimming	
Cycling	
Long jump	

 = 5  = 3  = 5  = 2  = 4  = 5

1. How many children participated in the events altogether?
2. What is the difference between the total number of boys participating in the javelin throw and the total number of children participating in long jump?
3. Which event saw the least number of participants?
4. Which event had the maximum number of participants?
5. What is the total number of children participating in swimming and cycling altoghter?
6. Make a tally chart based on the pictograph shown above.

Athletics	
Javelin throw	
Skating	
Swimming	
Cycling	
Long jump	

..... Date

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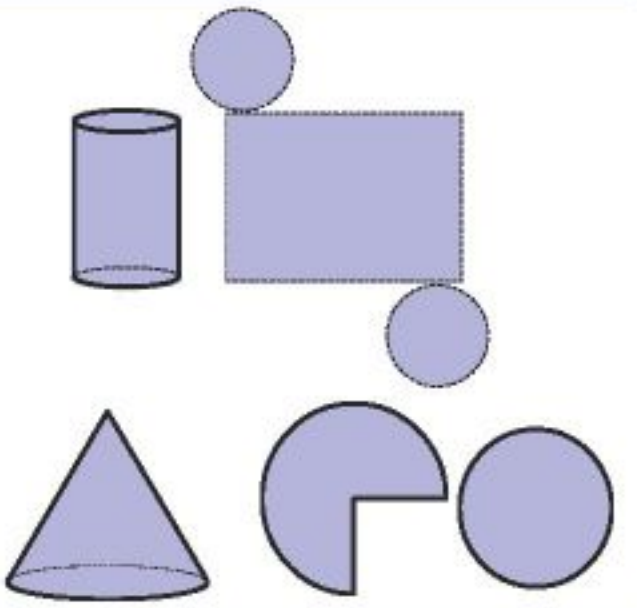
16 Visualisation of 3-D shapes and maps

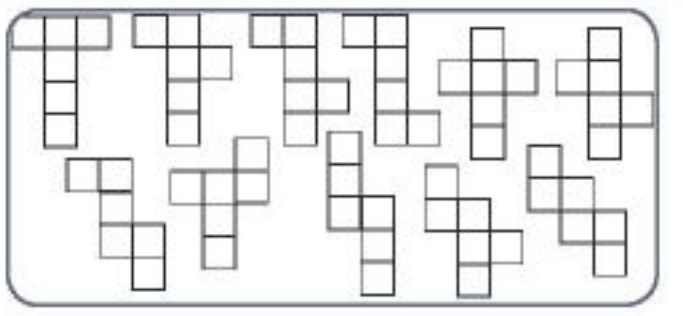
Steps to check if a net forms a solid

- Do the solid and the net have the same number of faces?
- Does the shape of the faces of the solid match the shape of the faces of their corresponding nets?
- If the net is to be folded to form a solid, will the sides fit together properly?

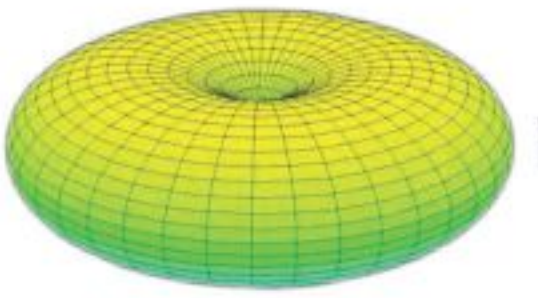


Do You Know?

- A cuboid has 11 possible nets altogether.

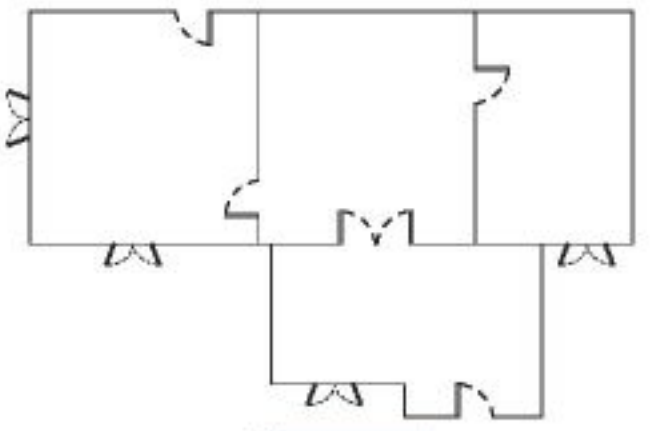


- These are common 3-D shapes. You must have seen it in the form of a donut, a tube of a tyre or a lifebuoy used to save people in water. But do you know its name? It's called a 'torus'



Torus

Perspective drawing or deep drawing



Floor map

..... Date

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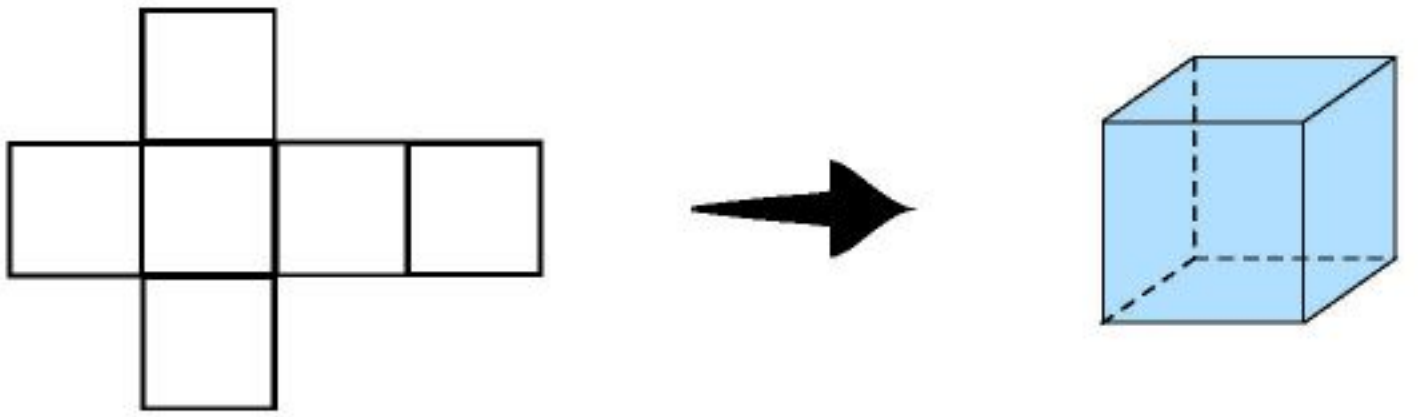
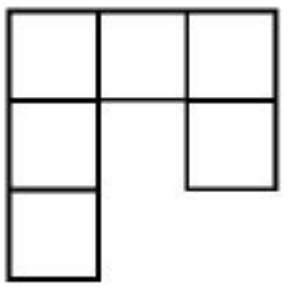
Nets for a cube

Here is one of the nets which will fold into a cube.



1. Tick the nets that can be folded into a cube.

(a)



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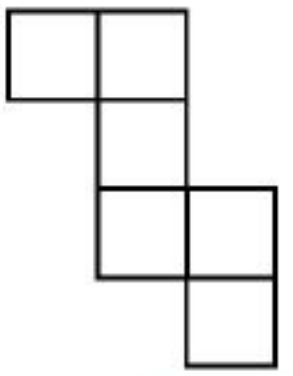
(b)



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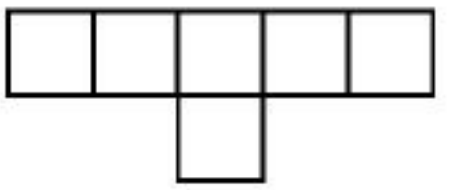
(c)



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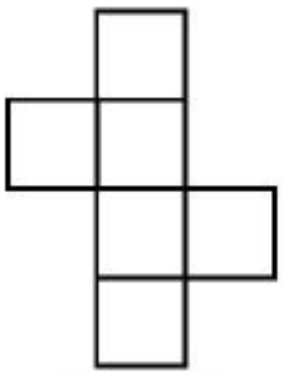
(d)



☐

2. (a) To get an open cubical box, how many squares are to be there in the net?

☐ squares

(b) Draw a net for an open cube.

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Nets for open and closed boxes

I Open the faces of an empty match-box. How do they look when you open them? Sketch it.

II Which of the following shapes do not make an open box when folded?

(a) (b) (c) (d)

III A suitcase is given below. Sketch the shape when all its faces and lid are spread.

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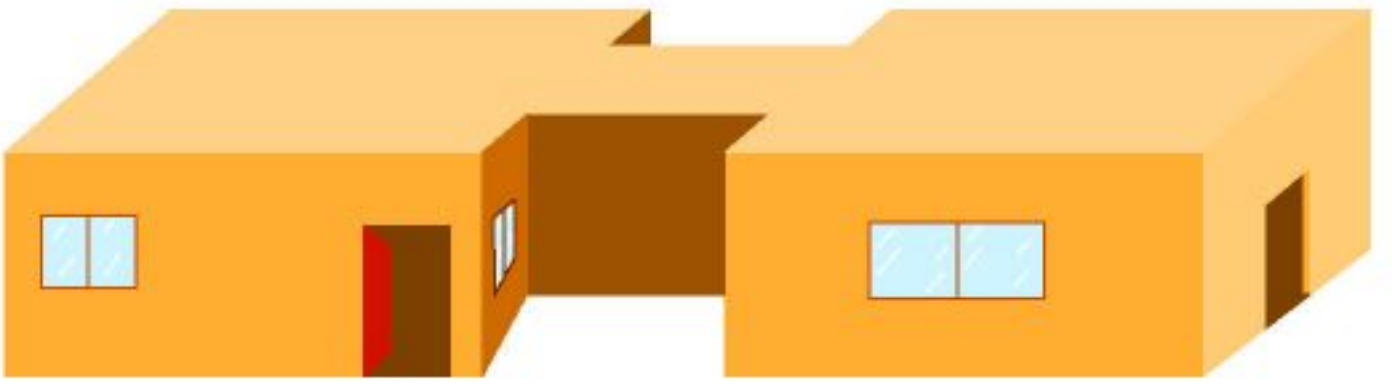
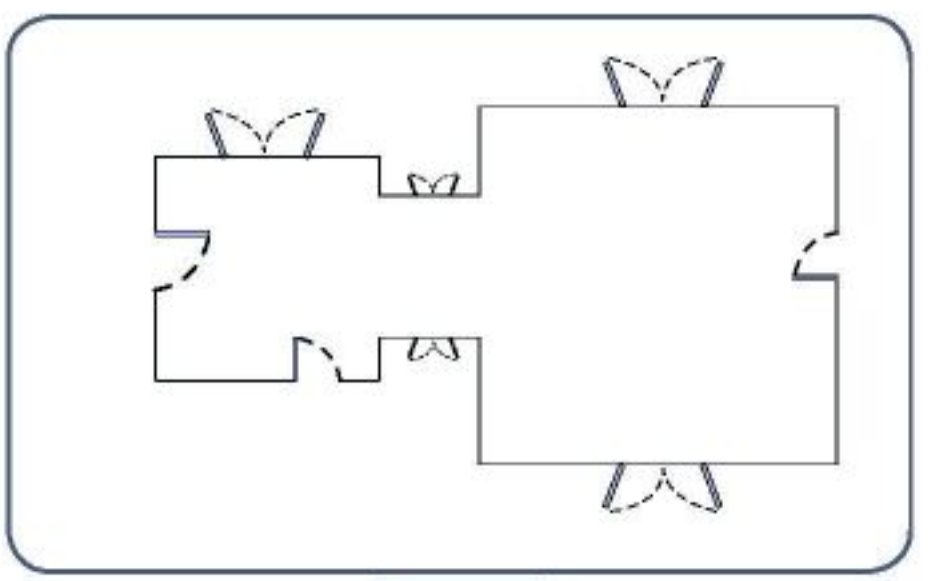
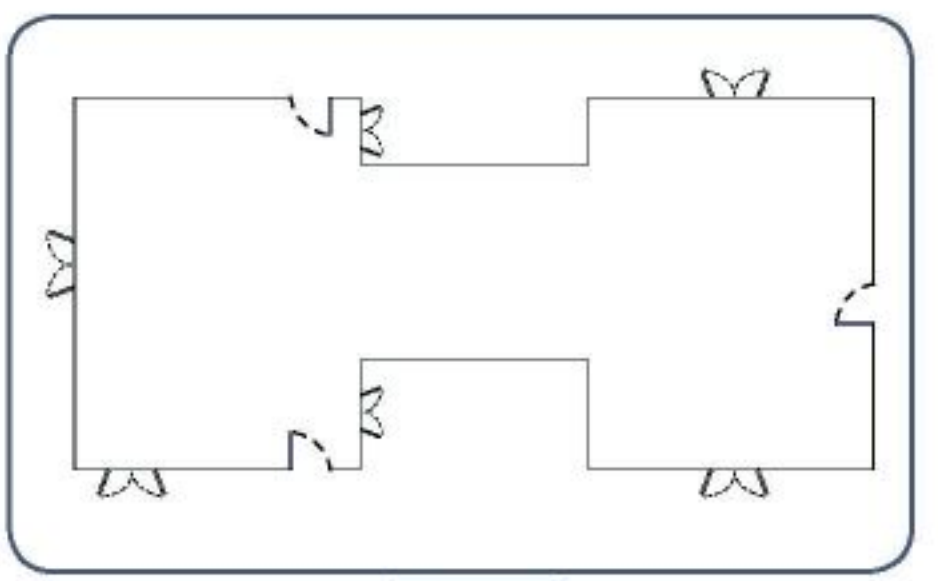
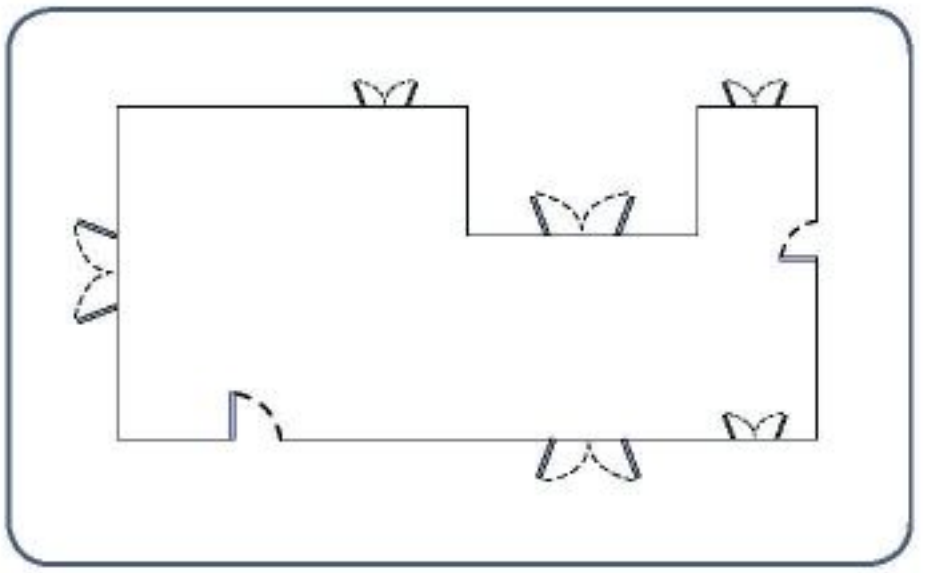
Match floor map with building

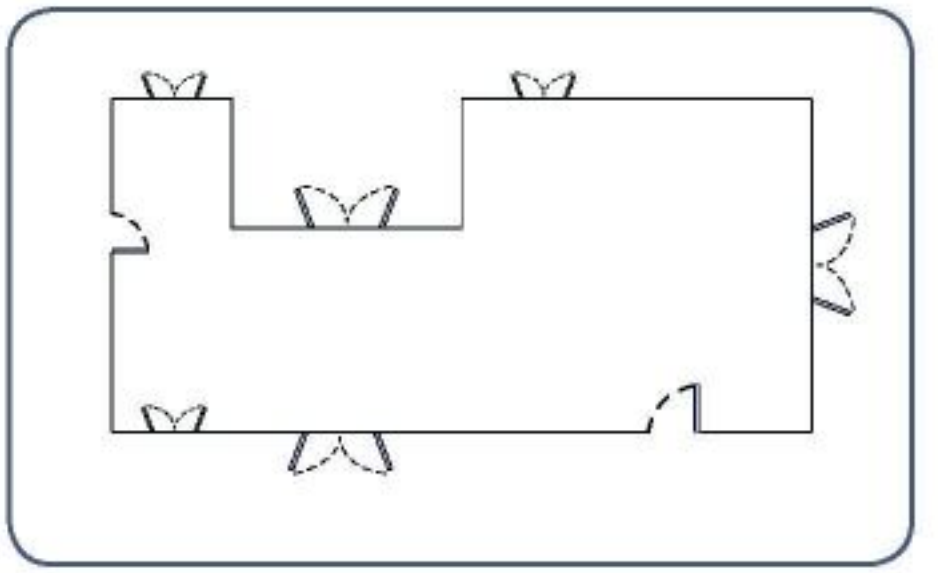
Four floor maps of the house are given. Match floor map with the building. Circle the doors and windows on the floor map that are not shown in the deep drawing of the house.











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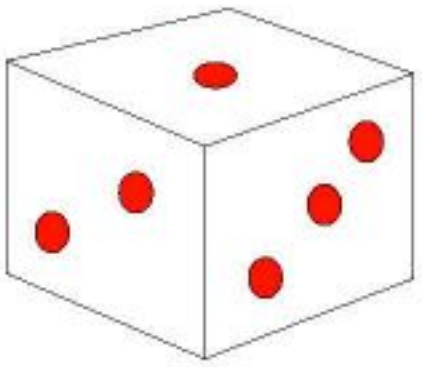
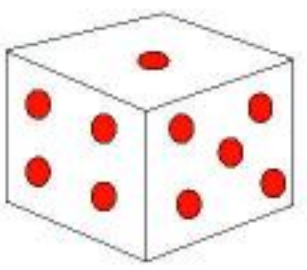
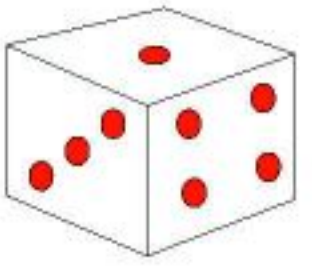
Deep drawing of cubes

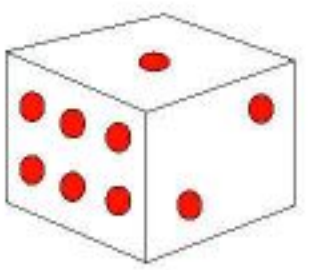
I A cubic dice has markings on its faces. The total of counts on opposite faces, always sum up to 7. Here is a deep drawing of a dice.

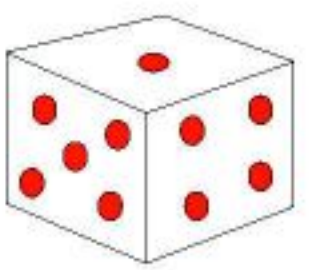


Which of the following is the correct deep drawing as seen from opposite side?

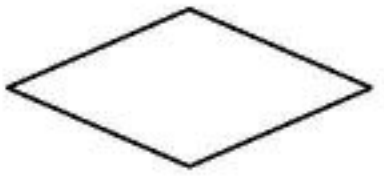
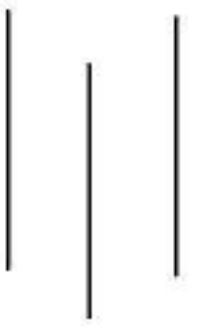








II Add lines to the images given to make a deep drawing.

Cube	Cuboid	Prism
		

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Identification of spots on the map

This is a photograph of the Gateway of India and its vicinities in Mumbai. The Taj Mahal Palace Hotel is a five star hotel located in the Colaba region of Mumbai, Maharashtra, India. It is next to the Gateway of India. In between the two you can see the Royal Bombay Yatch Club. You can also see the boats anchored in the harbour.

The map of the same location is shown in the next page.

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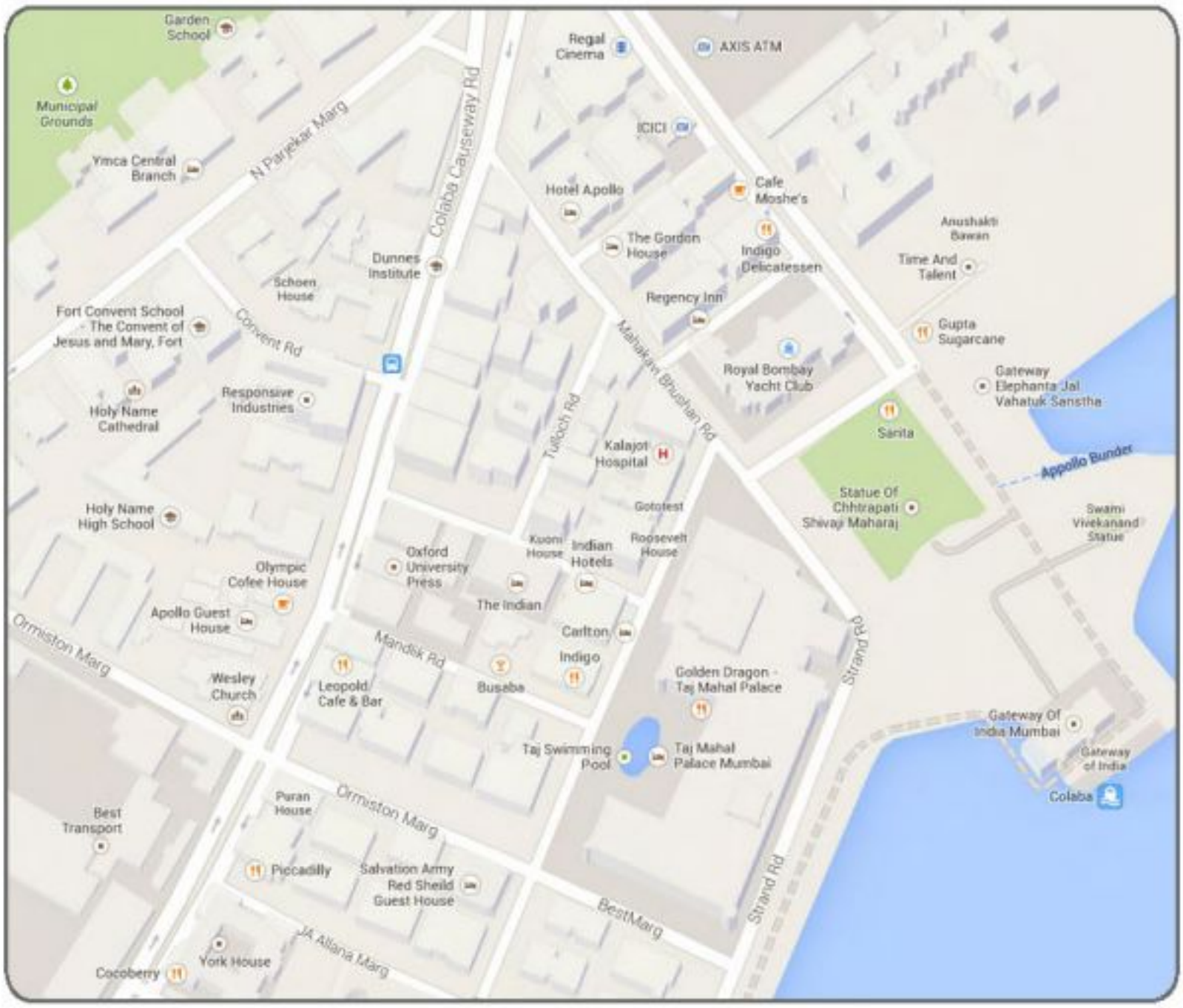
Identification of spots on the map



Spot the following on the map and mark X on each of them using your sketch pen.

1. The Gateway of India
2. The Taj Mahal Palace Hotel
3. Royal Bombay Yatch club
4. Strand Road
5. Two statues
6. Olympic coffee House
7. Wesley Church
8. Area where the boats are docked

..... Date

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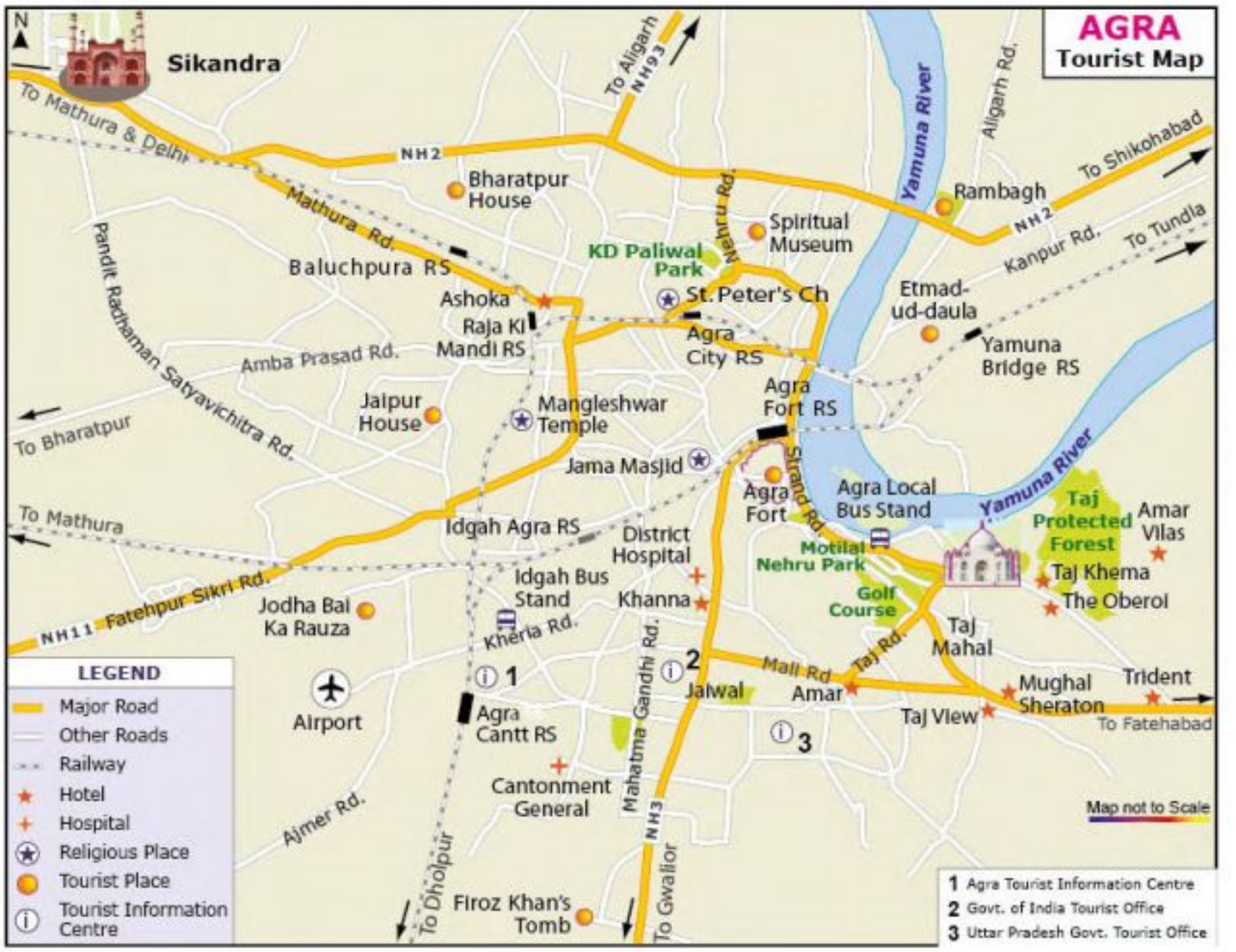
Estimating distances

Given below is the tourist map of Agra. Read the map carefully and answer the following questions.



1. Name the national highways passing through Agra.

2. Name the religious place which is closest to Agra fort railway station (RS)

3. Which is the closest tourist destination to the Agra airport?

4. Name the two major roads that can take you to the Taj Mahal.

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Up for a challenge?

I Here is a flower vase. Make sketches to show how it looks from the top, side and right side top corner.

II How many squares are to be there in a net to get a cuboid box which is open from two sides? Draw the net.

III Study the map and answer the questions

1. Name the four rivers of Sri Lanka.

2. What is the name of the bridge that connects India and Sri Lanka.

3. Name any four cities of Sri Lanka that are situated in the coastal region.

4. A gulf is a deep inlet of sea almost surrounded by land with a narrow mouth. Name the gulf near Sri Lanka.

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Figure it Out

Mental Maths 5

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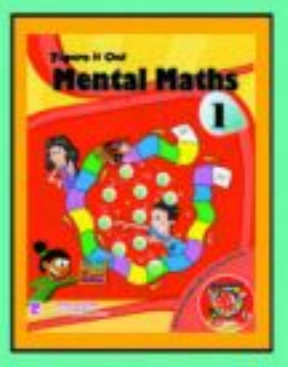

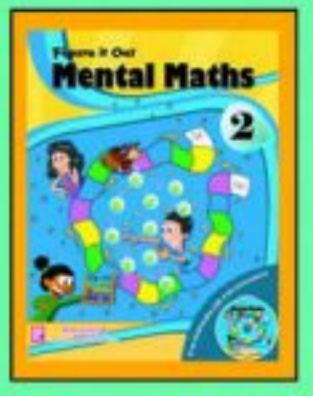

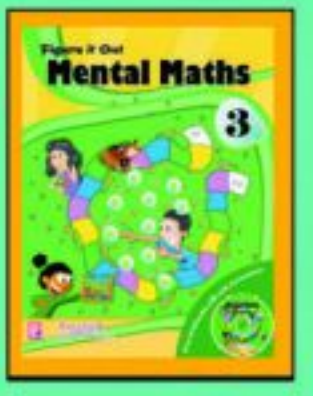

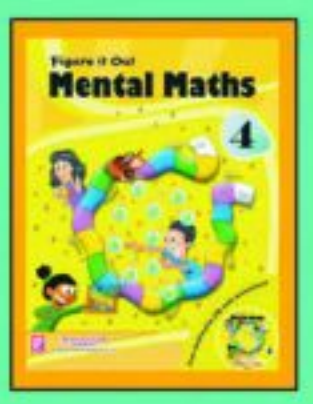

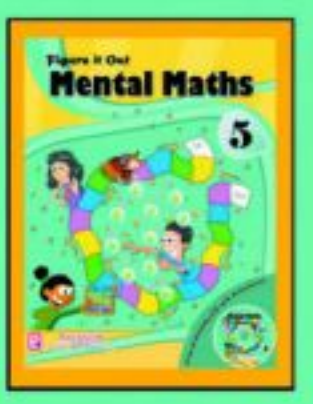

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