

# Grade 07 Unit 04

## Maths

### Course Outline

- Comparing Quantities
- Triangle

# MAT

(Monthly Achievement Tests)

Short Code: 447308

Test ID: NMM07U040



### Guide Lines

1. Each set consists of:

50 | Warm-up/Foundation Questions

30 | Regular Questions

20 | Thinking Ability Questions

- The time allocation and instructions regarding the questions are printed clearly in the beginning of each question types. The answers should be written or tick marked as per the instructions given. It is suggested to use pencil initially, so as to enable you to reuse the practice papers.
- According to the new pattern of CBSE these practice papers will be very useful especially for syllabus related Quiz, Debates, Visuals related checking and Orals etc.,**
- After marking the answers, the scores of students can be checked and for marks obtained guidelines are given along with the question solving instructions. Follow those instructions and if, you are fully satisfied with your performance then check for your expected grades as per the CBSE guidelines as given on the back of each set.
- Remember that this is only a guideline not the finally worked out result. You can further improve your performance by increase your practice.
- For your convenience please follow following essential examiner's advices:
  - Answer all the questions
  - Read all the Options carefully
  - Understand and use correct scientific language in your responses.

We from  wish skillful learning for your bright future.

## Before going for the test, look at least :

1. First of all go through the syllabus of the test according to the **Course Outline** provided at the front page of each MAT.
2. After going through the syllabus once or twice or even more time as per your satisfaction, first of all do the Warm-up questions. If you score A+ grade in those 50 questions go to the next level otherwise go through the chapter again.
3. The box for **Specific Information** is very useful as it adds to your concept building. Try to fill specific information in the proper way so that you will get the maximum benefit of it.
4. **Let's Chat** portion will help you to prepare for oral assessment. Through this you can increase your capacity to interact on a particular topic related to your syllabus.
5. The **Extra Diet** portion is also there to enhance your knowledge through visualization of concept. This portion provides you added knowledge on various related concepts.
6. The information related to time factor is there to enhance your time management skills.
7. From the examiners point of view it is always advised to use Pencil for initial efforts. The use of pen is fruitful only when the final effort comes.

## Examiner's Tips:

- ☞ Read the question carefully. Make sure you understand exactly what is required.
- ☞ If you find that you are unable to do a part of a question, do not give up. The next part may be easier and may provide a clue to what you might have done in the part you found difficult.
- ☞ Note the number of marks per question as guide to the depth of response needed.
- ☞ Underline or note the key words that tell you what is required.
- ☞ Underline or note data as you read the question.
- ☞ Structure your answer carefully.
- ☞ Show all steps in calculations. Include equations you use and show the substitution of data. remember to work according to units given.
- ☞ Make sure that your answers contain suitable significant figures (wherever necessary) and must include units in numericals.
- ☞ Draw diagrams and graphs carefully.
- ☞ Read data from graphs carefully; note scales and prefixes on axes.
- ☞ Keep your eye on the clock but don't panic.
- ☞ If you have time at the end, use it. Check that your descriptions and explanations make sense. Consider whether there is anything you could add to an explanation or description. Repeat calculations to ensure that you have not made a mistake.

To enlighten your fundamental/basic topic knowledge.

- A+. If you score 45 or above marks, move to the next section confidently.
- A. If you score between 40 and 45 marks, it is satisfactory. Bit more knowledge will bring excellent result.
- B. If you score below 40, kindly go through the topic more seriously.

## Section A (50 marks)

Time given – 50 minutes + 5 minutes for revision

Questions 1 to 50 carry 1 mark each.

Given one of them is the correct answer make your choice and write its name (a, b, c or d) in the answer box provided.

1. Which is greater? 3 : 4 or 4 : 5?

(a) 3 : 4

(b) 4 : 5

(c) both are equal

(d) None of these

T – 1 min

S – Comparing quantities

Ans.

2. The length of a rectangular field is twice its breadth. If the perimeter of the field is 72 m, then what is its breadth?

(a) 13 m

(b) 26 m

(c) 12 m

(d) 10 m

T – 1 min

S – Comparing quantities

Ans.

3. 8% of a number is 10. What is the number?

(a) 125

(b) 124

(c) 130

(d) 190

T – 1 min

S – Comparing quantities

Ans.

4. If 11% of a number exceeds 7% of the number by 18, the number is

(a) 72

(b) 360

(c) 450

(d) 720

T – 1 min

S – Comparing quantities

Ans.

5. If the selling price of 5 articles is the same as the cost price of 6 articles, then the gain % is

(a) 1%

(b) 5%

(c)  $16\frac{2}{3}\%$ 

(d) 20%

T – 1 min

S – Comparing quantities

Ans.

6. The cost of  $5\frac{1}{4}$  kg of oranges is Rs. 147. At what rate per kg are the oranges being sold?

(a) Rs. 30

(b) Rs. 28

(c) Rs. 36

(d) Rs. 42

T – 1 min

S – Comparing quantities

Ans.

7. Convert  $\frac{3}{8}$  into percentage.

(a) 37.5%

(b) 37%

(c) 38%

(d) None of these

T – 1 min

S – Comparing quantities

Ans.

8. Two angles of a triangle are  $40^\circ$  and  $60^\circ$ . Find the third triangle.

(a)  $90^\circ$

(b)  $80^\circ$

(c)  $40^\circ$

(d)  $60^\circ$

T – 1 min

S – Comparing quantities

Ans.

9. Find the angle of an equilateral triangle

(a) 90

(b) 45

(c) 60

(d) 100

T – 1 min

S – Triangle

Ans.

10. Angle of an isosceles triangle is  $70^\circ$  find the other angle.

(a)  $55^\circ$

(b)  $65^\circ$

(c)  $45^\circ$

(d)  $60^\circ$

T – 1 min

S – Triangle

Ans.

### True or False.

11. The sum of any two sides of a triangle is less than the third side.

T – 1 min

S – Triangle

Ans.

12. In an isosceles triangle the angles opposite to the equal sides are equal.

T – 1 min

S – Triangle

Ans.

13. A triangle having two sides equal is called an isosceles triangle.

T – 1 min  
S – Triangle

Ans.

14. The sum of the angles of a triangle is  $270^\circ$ .

T – 1 min  
S – Triangle

Ans.

15. In a right angle triangle, the hypotenuse is the longest side.

T – 1 min  
S – Triangle

Ans.

16. The money borrowed is called interest.

T – 1 min  
S – Comparing quantities

Ans.

17.  $\text{Loss} = CP - SP$ .

T – 1 min  
S – Comparing quantities

Ans.

18.  $SP = \frac{(100 + \text{gain}\%) \times CP}{100}$

T – 1 min  
S – Comparing quantities

Ans.

19.  $CP = \frac{100 \times SP}{100 + \text{loss}\%}$

T – 1 min  
S – Comparing quantities

Ans.

20. The additional money paid by the borrower is called the interest.

T – 1 min  
S – Comparing quantities

Ans.

### Fill in the blanks

21. The standard unit of area is \_\_\_\_\_.

T – 1 min  
S – Comparing quantities

Ans.

22. Four numbers  $a, b, c, d$  are said to be in proportion of  $a:b=c:d$  and we write \_\_\_\_\_ .

T – 1 min  
S – Comparing quantities

Ans. \_\_\_\_\_

23. A ratio has no \_\_\_\_\_ in itself.

T – 1 min  
S – Comparing quantities

Ans. \_\_\_\_\_

24. To convert a percentage into a fraction, we divide it by \_\_\_\_\_ .

T – 1 min  
S – Comparing quantities

Ans. \_\_\_\_\_

25.  $x\% = \frac{x}{100} =$  \_\_\_\_\_ .

T – 1 min  
S – Comparing quantities

Ans. \_\_\_\_\_

26. Amount = Principal + \_\_\_\_\_ .

T – 1 min  
S – Comparing quantities

Ans. \_\_\_\_\_

27. If the square of one side of a triangle is equal to the sum of the squares of the other two sides, then the triangle is \_\_\_\_\_ .

T – 1 min  
S – Triangle

Ans. \_\_\_\_\_

28. A scalene triangle has all its sides of \_\_\_\_\_ length.

T – 1 min  
S – Triangle

Ans. \_\_\_\_\_

29. In equilateral triangle each of its angle measure \_\_\_\_\_ .

T – 1 min  
S – Triangle

Ans. \_\_\_\_\_

30. A triangle in which two sides of equal lengths is called an \_\_\_\_\_ triangle.

T – 1 min  
S – Triangle

Ans.

**Questions 31–35. Convert following into percent.**

31.  $\frac{12}{16}$

T – 5 min  
S – Comparing quantities

Ans.

32. 3.5

Ans.

33.  $\frac{49}{50}$

Ans.

34.  $\frac{2}{2}$

Ans.

35. 0.05

Ans.

36. Is there a triangle whose sides have lengths 10.4 cm, 5.9 cm and 4.7 cm.

T – 1 min  
S – Triangle

Ans.

37. The lengths of two sides of a triangle are 7 cm and 9 cm. Between which two numbers can length of the third side fall.

T – 1 min  
S – Triangle

Ans.

38. Determine whether the triangle whose lengths of sides are 3 cm, 7 cm and 9 cm is a right angled triangle.

T – 1 min  
S – Triangle

Ans.

39.  $\triangle PQR$  is right angled at  $Q$  If  $PQ = 6$  cm and  $QR = 12$  cm.

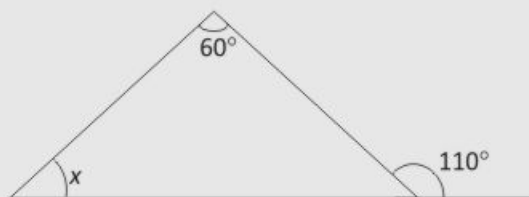
T – 1 min  
S – Triangle

Ans.



40. Find angle  $x^\circ$

T – 1 min  
S – Triangle



Ans.

41. Find  $CP$  when  $SP = \text{Rs. } 1166$  and  $\text{gain} = 6\%$ .

T – 1 min  
S – Comparing quantities

Ans.

42. What amount is 25% more than Rs. 80?

T – 1 min  
S – Comparing quantities

Ans.

43. If 125% of  $x$  is 6. Find  $x$ .

T – 1 min  
S – Comparing quantities

Ans.

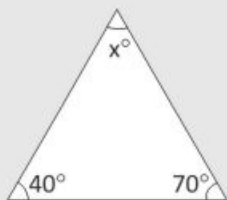
44. Express 18 hours as a percentage of 3 days.

T – 1 min  
S – Comparing quantities

Ans.

**Find the value of the following:**

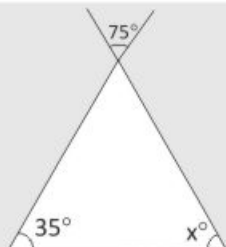
45.



T – 1 min  
S – Triangle

Ans.

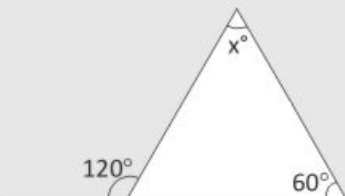
46.



T – 1 min  
S – Triangle

Ans.

47.



T – 1 min  
S – Triangle

Ans.

48.



T – 1 min  
S – Triangle

Ans.

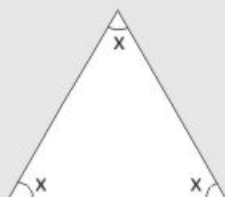
49.



T – 1 min  
S – Triangle

Ans.

50.



T – 1 min  
S – Triangle

Ans.

To enlighten your regular knowledge of topic. If you score more than 55 marks here, you have achieved this level brilliantly. Move to the next level of test papers.

Section B (60 marks)

Time given – 45 minutes + 5 minutes for revision

Questions 51 to 80 carry 2 marks each.

From Questions 51–55, find the unknown quantity in each of the following.

51. Principal = Rs. 500, Rate of interest per annum = 12%, time period = 3 years,  
Interest = ?

T – 5 min  
S – Comparing  
quantities

Ans.

52. Principal = Rs. 1250, Rate of interest per annum = \_\_\_\_ %, Time period = 4 years, Interest = Rs. 700.

Ans.

53. Principal = Rs. 200, Time period = 5 years, Rate of interest per annum = 6%,  
Interest = \_\_\_\_\_, Amount = \_\_\_\_\_.

Ans.

54. Principal = Rs. 600, Rate of interest per annum = 10%, Time period = \_\_\_\_\_, Interest = Rs. 210

Ans.

55. Principal = Rs. \_\_\_\_\_, Rate of interest per annum = 4%, Time period =  $2\frac{1}{2}$  years, Interest = Rs. 28

Ans.

56. If  $2 : 9 :: x : 81$ , then the value of  $x$ ?

T – 1 min  
S – Comparing quantities

Ans.

57. If 15 oranges cost Rs. 70. What do 39 oranges cost?

T – 1 min  
S – Comparing quantities

Ans.

58. A book was bought for Rs. 400 and sold for Rs. 336. Find loss percentage.

T	– 1 min
S	– Comparing quantities

Ans.

59. A basket contains 350 eggs. If 12% of the eggs are rotten, find the number of eggs good enough to be sold.

T	– 1 min
S	– Comparing quantities

Ans.

60. A bicycle was purchased for Rs. 1050 and sold for Rs. 1275. Find the profit or loss and percentage.

T	– 1 min
S	– Comparing quantities

Ans.

61. The simple interest on Rs. 6250 at 4% per annum for 6 months is

T	– 1 min
S	– Comparing quantities

Ans.

62. The simple interest on a certain sum for 3 years at 10% per annum is Rs. 829.50. Find the sum.

T	– 1 min
S	– Comparing quantities

Ans.

63. A shopkeeper bought a chair for Rs. 375 and sold it for Rs. 400. Find the percentage gain.

T	– 1 min
S	– Comparing quantities

Ans.

64. An article was sold for Rs. 250 at a gain of 5%. What was its cost price?

T	– 1 min
S	– Comparing quantities

Ans.

65. Divide 15 sweets between Monu and Sonu, so that they get 20% and 80% of them respectively.

T	– 1 min
S	– Comparing quantities

Ans.

66. Find 50% of 164

T	– 2 min
S	– Comparing quantities

Ans.



67. 8% children of a class of 25 like getting wet in rain. How many children like getting wet in rain?

T – 2 min  
S – Comparing quantities

Ans.

68. 75% of what number is 15

T – 2 min  
S – Comparing quantities

Ans.

**Questions 69–70. Convert each part of the ratio to percentage.**

69. 3 : 1

T – 4 min  
S – Comparing quantities

Ans.

70. 2 : 3 : 5

Ans.

71. Gardening scissors bought for Rs. 250 and sold for Rs. 325. Find profit percentage.

T – 2 min  
S – Comparing quantities

Ans.

72. Find the length of  $x$

T – 2 min  
S – Triangle

Ans.

73. Determine whether the triangle whose lengths of sides are 13 cm, 12cm, and 5cm is a right angled triangle

T – 2 min  
S – Triangle

Ans.

**74-77, Is it possible to have a triangle with the following sides.**

74. (a) 4 cm      (b) 7cm      (c) 8.2 cm

T – 8 min  
S – Triangle

Ans.

75. (a) 8 cm (b) 9.2 cm (c) 10.8 cm

Ans.

76. (a) 8.6 cm (b) 4.2 cm (c) 3.8 cm

Ans.

77. (a) 4.2 cm (b) 8.8 cm (c) 9.6 cm

Ans.

78. 25% of Rs. 76

T – 2 min  
S – Comparing quantities

Ans.

79. 7.5% of 800 m

T – 2 min  
S – Comparing  
quantities

Ans.

80.  $4\frac{1}{3}\%$  of 210 km

T – 2 min  
S – Comparing  
quantities

Ans.

To enlighten your regular knowledge of topic. If you score more than 50 marks here, you have achieved this level brilliantly. Move to the next level of test papers.

Section C (60 marks)

Time given – 45 minutes + 5 minutes for revision

81. Find the simple interest on Rs. 6880 at  $7\frac{1}{2}\%$  per annum for 8 months. Also find the amount.

T – 1 min  
S – Comparing quantities

Ans.

82. Divide Rs. 3600 into two parts such that if one part be lent at 9% per annum and the other at 10% per annum, the total annual income is Rs. 333.

T – 2 min  
S – Comparing quantities

Ans.

83. Chalk contains 10% calcium, 3% carbon and 12% oxygen. Find the amount (in grams) of each of these in 1 kg of chalk.

T – 2 min  
S – Comparing quantities

Ans.

84. In a hostel of 100 girls, there are food provisions for 40 days. If 60 more girls join the hostel, how long will these provisions last?

T – 2 min  
S – Comparing quantities

Ans.

85. A man buys oranges at 3 for Rs. 4 and sells 4 for Rs. 6. Find his gain percentage?

T – 2 min  
S – Comparing quantities

Ans.

86. A man invests Rs. 2000 for 3 years. He also invests Rs. 1600 for same period but at a rate 2% higher than the first. These transactions enable him to earn an interest of Rs. 996 at the end of three years. Find the two rates of interest.

T – 2 min  
S – Comparing quantities

Ans.

87. If the third proportional to 7 and  $x$  is 28. Find the value of  $x$ .

T – 2 min  
S – Comparing quantities

Ans.

88. 16 men can reap a field in 30 days. In how many days would 12 men reap the same field?

T – 2 min  
S – Comparing quantities

Ans.

89. In how much time will a sum become double of itself at  $12\frac{1}{2}\%$  per annum simple interest?

T – 2 min  
S – Comparing quantities

Ans.

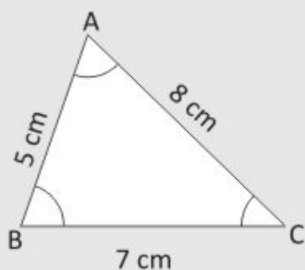
90. My mother says, in her childhood petrol was Rs. 1 a litre. It is Rs. 52 per litre today. By what percentage has the price gone up?

T – 2 min  
S – Comparing quantities

Ans.

**Questions 91–96. Classify each of the triangles according to its sides and angles.**

91.

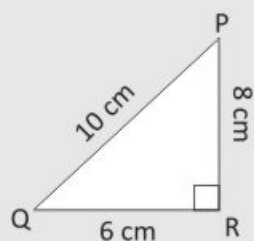


T – 14 min  
S – Triangle

Ans.

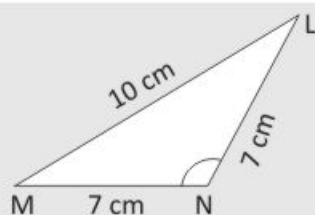


92.



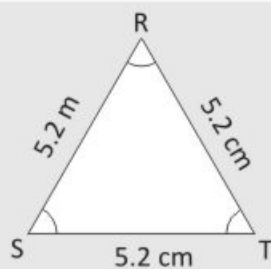
Ans.

93.



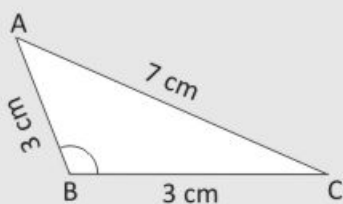
Ans.

94.



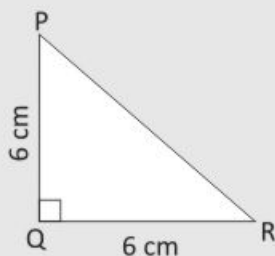
Ans.

95.



Ans.

96.




97. A 13 m long ladder reached a window 12m high from the ground on placing it against a wall at a distance  $a$ . Find the distance of the foot of the ladder from the wall.

T	– 3 min
S	– Triangle

98. Find the perimeter of the rectangle whose length is 30 cm and a diagonal 50 cm.

T	– 3 min
S	– Triangle

99. A tree is broken at a height of 8 cm from the ground and its top touches the ground at a distance of 6 cm from the base of the tree. Find the original height of the tree.

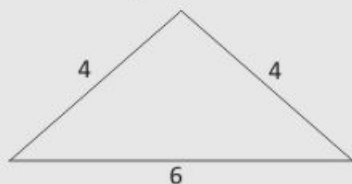
T – 3 min  
S – Triangle

Ans.

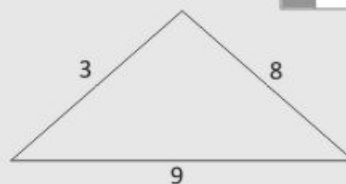
100. Name the triangle osuiscalans triangle

(i) Isosceles triangle

(a)



(b)



T – 3 min  
S – Triangle

Ans.

# Tools at a glance

**Opening Window** with instructions for your potential analysis and guideline to improve your performance.

**Opening Window**

**Let's Chat**, the feature with suggestive topics for discussion so as to improve your capacity to debate on various topics.

T — .....  
S — .....

Box with time break-up of questions (T) and its concept (S, i.e., subject)

 **Let's Chat**

**Brain Teasers**



**Brain Teasers** i.e., Questions with difference to make the concepts of students crystal clear. These are the questions with higher difficulty levels to check the grip of the students over the concepts.

**Extra Diet**, the web link, the notation: [www.\\_\\_\\_\\_\\_](#) to provide additional information regarding the concept for more clarity of thoughts.

 **Extra Diet**

## CBSE GRADING PATTERN

As the new pattern includes **CCE** (Continuous and Comprehensive Evaluation) which will be run in two terms i.e., from April to September and October to March. Thus the school will conduct four **Formative** and two **Summative** Assessments.

However, the most generalised version of grades is given below:

MARKS	PERCENTAGE	GRADE	GRADE POINT	CATEGORY
91 to 100		A1	10	Exceptional
81 to 90		A2	9	Excellent
71 to 80		B1	8	Very Good
61 to 70		B2	7	Good
51 to 60		C1	6	Ordinary (Fair)
41 to 50		C2	5	Average
33 to 40		D	4	Below Average
21 to 32		E1	3	Improvement Needed
Below 20		E2	Below 2	Unsatisfactory