

Grade 06 Unit 11

Maths

Course Outline

- Algebra
- Ratio and proportion
- Symmetry

MAT

(Monthly Achievement Tests)

Short Code: 447307

Test ID: NMM06U0110



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.

For each question four options are 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. $3x + 4x$ is equal to

(a) $9x$

(b) $4x$

(c) $7x$

(d) $3x$

T – 1 min

S – Algebra

Ans.

2. $a \times b + a \times c$ can be written as

(a) $b \times (a + c)$

(b) $c \times (a + b)$

(c) $a \times (b + c)$

(d) none of these

T – 1 min

S – Algebra

Ans.

3. Commutative of addition of numbers can be written as

(a) $a \times (b + c)$

(b) $a + b = b + a$

(c) $ab = ac$

(d) $a \times b = b \times a$

T – 1 min

S – Algebra

Ans.

4. x divided by 2 is written as

(a) $x \times 2$

(b) $x \div 2$

(c) $2x$

(d) none of these

T – 1 min

S – Algebra

Ans.

5. $\frac{5}{6} = \frac{15}{\square}$

(a) 12

(b) 15

(c) 18

(d) 21

T – 1 min

S – Algebra

Ans.

6. $\frac{9}{11} = \frac{36}{\quad}$

- (a) 36
(c) 44

- (b) 33
(d) 88

T – 1 min
S – Algebra

Ans.

7. Mirror image of A

- (a) A
(c) can't say

- (b) a
(d) none of these

T – 1 min
S – Symmetry

Ans.

8. Mirror image of E

- (a) E
(c) e

- (b) 3
(d) none of these

T – 1 min
S – Symmetry

Ans.

9. Julie has 16 brooches fewer than Vicki who has 44 brooches. How many brooches must Vicki give to Julie so that both of them have the same number of brooches?

- (a) 4
(c) 28

- (b) 8
(d) 30

T – 1 min
S – Ratio and proportion

Ans.

10. The table below shows the monthly wages of the workers in Rs.

Amount of money	1000	2500	2800	3000
Number of workers	5	4	7	6

_____ workers get atleast Rs. 2000 as monthly wages

- (a) 10
(c) 15

- (b) 13
(d) 17

T – 1 min
S – Data handling

Ans.

True or False

11. The halves of a rectangle are the example of symmetry.

T – 1 min
S – Symmetry

Ans.

12. A rectangle has only one line of symmetry.

T – 1 min
S – Symmetry

Ans.

13. The reflection of O is same.

T – 1 min

S – Symmetry

Ans.

14. The line symmetry is closely related to mirror reflection.

T – 1 min

S – Symmetry

Ans.

15. Rangoli is an example of symmetry.

T – 1 min

S – Symmetry

Ans.

16. A kaleidoscope uses mirrors to produce only one image.

T – 1 min

S – Symmetry

Ans.

17. If two ratios are not equal, then they are not in proportion.

T – 1 min

S – Ratio and proportion

Ans.

18. $6x + x = 5x + x + x$

T – 1 min

S – Algebra

Ans.

19. If $p - 3 = 12$ then $p = 15$

T – 1 min

S – Algebra

Ans.

20. If $2m - 4 = 2 = 4m$ then $m = 6$

T – 1 min

S – Algebra

Ans.

Fill in the blanks

21. If $x = 20$ then $4x - 30 =$

T – 1 min

S – Algebra

Ans.

22. If $2x = 30$ then $7x - 15 =$

T – 1 min
S – Algebra

Ans.

23. If $\frac{3m}{2} = 9$ then $m =$

T – 1 min
S – Algebra

Ans.

24. $\frac{3}{8} = \frac{39}{\quad}$

T – 1 min
S – Ratio and proportion

Ans.

25. $\frac{4}{9} = \frac{36}{\quad}$

T – 1 min
S – Ratio and proportion

Ans.

26. $25:30:: \quad :48$

T – 1 min
S – Ratio and proportion

Ans.

27. $30: \quad ::45:60$

T – 1 min
S – Ratio and proportion

Ans.

28. Mirror image of O : _____.

T – 1 min
S – Symmetry

Ans.

29. Mirror image of P : _____.

T – 1 min
S – Symmetry

Ans.

30. Mirror image of L : _____.

T – 1 min
S – Symmetry

Ans.

Match the following columns:

Column A		Column B	
31.	A scalene triangle	(i)	two line of symmetry
32.	A rectangle	(ii)	no line of symmetry
33.	An equilateral triangle	(iii)	three line of symmetry
34.	An isosceles triangle	(iv)	only one line of symmetry
35.	Divide 180 in the ratio 3:6 between A and B.	<div>T – 1 min</div> <div>S – Ratio and proportion</div>	

Ans.

36.	Give two equivalent ratios of 3:5	<div>T – 1 min</div> <div>S – Ratio and proportion</div>	
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Ans.

Questions 37–39, there are 25 girls and 50 boys in a class

37.	What is the ratio of numbers of girls to the number of boys.	<div>T – 1 min</div> <div>S – Ratio and proportion</div>	
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Ans.

38. What is the ratio of number of boys to the total number of students in the class.

T – 1 min
S – Ratio and proportion

Ans.

39. What is the ratio of number of girls to the total number of students in the class.

T – 1 min
S – Ratio and proportion

Ans.

40. Are 70, 80, 90, and 100 are in proportion.

T – 1 min
S – Ratio and proportion

Ans.

41. Are 25, 75, 100 and 300 are in proportion.

T – 1 min
S – Ratio and proportion

Ans.

42. If the cost of 6 roses is Rs.360, then what will be the cost of 10 roses.

T – 1 min
S – Ratio and proportion

Ans.

43. A car travels 200 km in 10 liters of petrol. How much distance will it cover in 2.5 liters of petrol?

T – 1 min
S – Ratio and proportion

Ans.

44. If the cost of a dozen bananas is Rs.144. What will be the cost of 20 bananas?

T – 1 min
S – Ratio and proportion

Ans.

45. Sachin made 90 runs in 10 overs and Deepak made 42 runs in 6 overs. Who made most runs per over?

T – 1 min
S – Ratio and proportion

Ans.

Question 46–47. A car travels 70 km in $1\frac{1}{2}$ hours

46. How much time is required to cover 110 km with the same speed?

T – 1 min
S – Ratio and proportion

Ans.

47. Find the distance covered in 3 hours with the same speed.

T – 1 min
S – Ratio and proportion

Ans.

48. Priya is 4 years younger than Ravi. If Ravi's age is x years find the age of Priya's age.

T – 1 min
S – Ratio and proportion

Ans.

Solve the following:

49. $3x + 3 = 4x + 11$

T – 1 min
S – Algebra

Ans.

50. $13m + 9 = m + 12$

T – 1 min
S – Algebra

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.

51. 2 dozens of oranges cost Rs. 60. Find the cost of 120 similar oranges.

T – 1 min
S – Ratio and proportion

Ans.

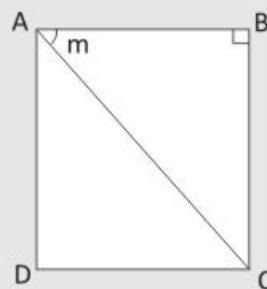
52. A cookie machine shapes 40 cookies per minute.
At this rate, how many dozens of cookies will it shape in an hour.

T – 1 min
S – Ratio and proportion

Ans.

53. Figure PQRS is a rectangle. Find $\angle m$.

T – 1 min
S – Angle



Ans.

Read the questions carefully. Then write the answers in the space provided.

Write the following using numbers, literals and arithmetic operations:

54. 7 less than x

T	– 1 min
S	– Algebra

Ans.

55. 3 more than quotient of x by y

T	– 1 min
S	– Algebra

Ans.

56. 5 times x added to 2 times y

T	– 1 min
S	– Algebra

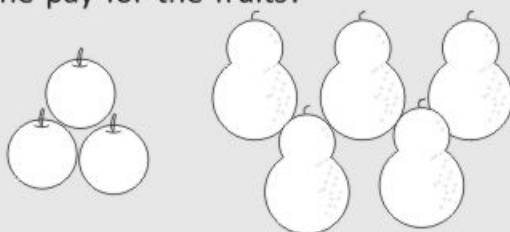
Ans.

57. Find the value of $2x + 3y + 1$ if $x = 3$ and $y = -2$

T	– 1 min
S	– Algebra

Ans.

58. Madam Aliya bought 3 dozen apples and 25 pears. Cost of each apples Rs. 3 and each pear is Rs. 5. How much did she pay for the fruits?



T – 1 min
S – Unitary method

Ans.

59. The annual fee charged from a student of class VI in a school is Rs. 80. If there are, in all 235 students in class VI, find the total collection.

T – 1 min
S – Multiplication

Ans.

60. Pooja spent for pen Rs. 10.50 for buying a pen and Rs. 3.75 for one pencil. How much money did she spend?

T – 1 min
S – Simple maths

Ans.

61. Lily has 42 coins in her purse.

The ratio of the number of 10-cent coins to the number of 20-cent coins is 5 :9.
How much money does Lily have in her purse?

T – 1 min
S – Algebra

Ans.

62. What is the greatest number of 3-minute nursery rhymes that can be recorded with 20-second intervals in a 1-hour tape?

T – 1 min
S – Time

Ans.

63. The current of a stream runs at the rate of 2 km/hr. A motor boat goes 10 km up stream and back again to the starting point in 55 minutes. Find the speed of the motor boat in still water.

T – 1 min
S – Algebra

Ans.

64. Find the value of $3m$ if $m = 8$.

T – 1 min
S – Algebra

Ans.

65. Simplify $7y + 22 + 8y - 7 - 5y - 3$

T – 1 min
S – Value of variables

Ans.

66. Aditi is 5 yr 8 month younger than Smiriti. Smiriti is 20 yr old. What is the age of Aditi after $1\frac{1}{2}$ years?

T – 2 min
S – Algebra

Ans.

67. Lito's weight is 73 kg, 4 kg more than Minto. What is the average weight of Lito & Minto?

T – 2 min
S – Percentage

Ans.

68. Find the value of $12m$ if $m = 4$

T – 2 min
S – Variable

Ans.

69. Simplify $28p - 42p + 18p - 2p + 9p$

T – 2 min
S – Algebraic expression

Ans.

70. A number M is smaller than 100. M is a multiple of 4 as well as multiple of 8. What is greatest possible number of M ?

T – 2 min
S – Word problem

Ans.

71. At present the sum of Monica's age and Sheela's age is 44 yrs. After 2 years Monica's age will be three times that Sheela's. Find their present ages.

T – 2 min
S – Algebra

Ans.

72. The monthly consumption of cereals in a hostel of 400 students is 5200 kg. Find the consumption, if the number of students is only 65?

T – 2 min
S – Proportion

Ans.

73. The cost of 30 metres of polyster cloth is Rs 150. Find the cost of 16 metres of cloth.

T – 2 min
S – Proportion

Ans.

74. A family of 4 persons consumes 6 kg of sugar in a month. What will be the monthly consumption of sugar, if the number of family members becomes 6?

T – 2 min
S – Proportion

Ans.

75. Smita's mother is 36 years old. Two years from now, mother's will be 4 times of Smita's age. What is Smita's present age?

T – 2 min
S – Algebra

Ans.

76. Maya, Madhu and Moni are friends studying in the same class. In a class test in Geography. Maya got 16 out of 25, Madhu got 20. Their average score was 19. How much did Moni score?

T – 2 min
S – Algebra

Ans.

77. A woodcutter took 12 minutes to make 3 pieces of a block of wood. How much time would be needed to make 6 such pieces?

T – 2 min
S – Proportion

Ans.

78. The ratio of the sale of eggs on a Sunday to that of the whole week of a grocery shop was 2 : 9. If the total sale of eggs in the same week was Rs. 360. Find the sale of eggs on the Sunday.

T – 2 min
S – Ratio

Ans.

79. Find the ratio of 95cm to 125 m.

T – 2 min

S – Ratio

Ans.

80. There are 50 faculty in a Institute of 350 students. Find the ratio of the numbers of faculties to the number of teachers.

T – 2 min

S – Ratio

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. There are the 50 faculty in a Institute of 350 students. find the ratio of the numbers of faculties to the number of teacher.

T – 2 min
S – Ratio

Ans.

82. $\frac{19}{28} = \frac{\quad}{56} = \frac{95}{\quad}$

T – 2 min
S – Ratio

Ans.

83. 5 girls and 4 boys share 179 badges.
Each boy gets 21 badges and the girls share the remaining badges equally.
How many badges does each girl get?

T – 2 min
S – Simple maths

Ans.

84. Daisy bought 4 skirts at Rs 140 each and had some money left. If there was a 20% discount for each skirt, the money she had left would be increased by 30%. How much money did she have at first?

T – 2 min
S – Ratio

Ans.

85. A box of hair clips was put for sale. Xiuli bought 0.5 of the hair clips in the box and was given 5 hair clips free of charge. Then Yaxi bought 0.5 of the remaining hair clips and was given 3 free of charge. Later, Zeta bought 0.5 of the rest of hair clips and was given 2 free of charge. A dozen hair clips was left in the box after that. Find the original number of hair clips in the box.

T – 2 min
S – Algebra

Ans.

86. A group of children donate some books. The ratio of the number of boys to the number of girls was 3 : 2. Each boy donated 2 more books than each girl. Each girl donated 3 books and the children donated a total of 2205 books.

- (a) How many girls were there?
(b) How many were there?

T – 2 min
S – Ratio

Ans.

87. The weight of 45 chairs is 18kg. How many such chairs can be loaded on a truck having a capacity of carrying 4000 kg load?

T – 2 min
S – Proportion

Ans.

88. The flights from Delhi to Mumbai and Delhi to Kolkata take $1\frac{3}{4}$ hr and 2 hr respectively. If the air flight distance from Delhi to Mumbai is 1225 km and Delhi to Kolkata is 1300 km, find the rate of the speeds of two flights.

T – 2 min
S – Ratio

Ans.

89. A certain amount was divided between Kavita and Reena in the ratio of 4:8. If Reena's share was Rs. 2400. The total amount is

T – 2 min
S – Algebra

Ans.

90. If the weight of a 13 m long iron rod is 23.4 kg, the weight of 6 m long of such rod will be

T – 2 min
S – Proportion

Ans.

91. If the cost of 20 article is Rs. 650, then the cost of the 30 articles is

T – 2 min
S – Ratio

Ans.

92. Taking certain time, Ranu runs 1000 metres while. Rupa runs 800 metres, Rupa runs 300 metres while Astha runs 400 metres. How many metres can Astha run while Ranu runs 600 metres?

T – 2 min
S – Proportion

Ans.

93. Minah has Rs 50 more than Poh Lin. Shelly has Rs 20 more than Poh Lin. The 3 girls have a total of Rs 400. How much money does Minah have?

T – 2 min
S – Proportion

Ans.

94. In a game, one has to hit either the white target or the black target. 4 more points were awarded for hitting a black target. Johari hit 32 white targets and 28 black targets and scored 412 points.

How many points would Johari score if he hit 16 white targets and 12 black targets?

T – 2 min
S – Algebraic expression

Ans.

95. Mr Singh sold a total of 792 pens on Monday and Tuesday. On Monday, the ratio of the number of blue pens to black pens to red pens and sold was 5 : 3 : 2. On Tuesday, the ratio was 2 : 7 : 4. If he sold the same number of red pens on both days, find the total number of blue pens he had sold in the 2 days.

T – 2 min
S – Algebraic expression

Ans.

96. $x:5 = 3:15$

T – 3 min
S – Ratio and proportion

Ans.

97. Each gram of a metal costs Rs 26 and each cubic centimetre of the metal weighs 19 g. 2 of the metal bars have volumes of 3.3 cm^3 and 3 cm^3 . Together with another black of the metal bar, they weigh an average of 63 g. How much does the third metal bar cost? Give the answer corrected to the nearest dollar.

T – 3 min
S – Mensuration

Ans.

98. Cost of 100 apples is Rs. 6000. How many apples can be purchased in Rs. 100.

T – 3 min

S – Ratio and proportion

Ans.

99. The weight of 89 books is 12 kg. What is the weight of 40 books.

T – 3 min

S – Ratio and proportion

Ans.

100. Write down five examples of symmetry.

T – 3 min

S – Symmetry

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)



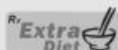
Let's Chat

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
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