Grade 07
Unit 08

Maths

Course Outline

- Perimeter and Area
- Algebric expressions

MAT

(Monthly Achievement Tests)

Short Code: 447308

Test ID: NMM07U080

SOUVENIR INFOTECH

Guide Lines

1.Each set consists of:

50 | Warm-up/Foundation Questions

30 | Regular Questions

20 | Thinking Ability Questions

2. 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.
3. **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.,**
4. 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.
5. Remember that this is only a guideline not the finally worked out result. You can further improve your performance by increase your practice.
6. For your convenience please follow following essential examiner's advices:

   a.Answer all the questions
   b.Read all the Options carefully
   c.Understand and use correct scientific language in your responses.

We from SOUVENIR INFOTECH **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 you knowledge through visulization 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.

50 Warm-up/Foundation Questions

Opening Window

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. $5x + 7x - 6x =$

(a) $6x$ (b) $7x$

(c) x (d) $11x$

T – 1 min
S – Algebraic expressions

Ans.

2. Multiply $6ab$ by $4b$.

(a) $24ab$ (b) $24a^2b^2$

(c) $24ab^2$ (d) 24

T – 1 min
S – Algebraic expressions

Ans.

3. One side of a rhombus is 20 and one of its diagonals measures 24 cm. What is the area of the rhombus?

(a) 384 cm^2 (b) 192 cm^2

(c) 96 cm^3 (d) 128 m^3

T – 1 min
S – Perimeter and area

Ans.

4. Find the area of a square, the length of whose diagonals is 2.8 metres.

(a) 2.56 m^2 (b) 3.92 m^2

(c) 2.76 m^2 (d) 8.40 m^2

T – 1 min
S – Perimeter and area

Ans.

5. Ice-cream is an example of _____ .

(a) triangle (b) cone

(c) cube (d) square

T – 1 min
S – Perimeter and area

Ans.

6. Find the area of a triangle in which base is 15 cm and altitude is cm.

(a) 120 cm^2 (b) 140 cm^2

(c) 126 cm^2 (d) 132 cm^2

T – 1 min
S – Perimeter and area

Ans.

7. One side of a parallelogram is 12 cm. Its distance from the opposite side is 13.5 cm. Find the area of the parallelogram.

(a) 142 cm^2 (b) 162 cm^2

(c) 170 cm^2 (d) 182 cm^2

T – 1 min
S – Perimeter and area

Ans.

8. Circumference of the circle is 88 cm. Find the radius of the circle. $\left(\pi = \frac{22}{7}\right)$

(a) 10 cm (b) 12 cm

(c) 13 cm (d) 14 cm

T – 1 min
S – Perimeter and area

Ans.

9. The perimeters of a square and a rectangle are equal. If their areas are $A\,m^2$ and $B\,m^2$, then which of the following is a true statement?

(a) $A < B$ (b) $A \leq B$

(c) $A > B$ (d) $A \geq B$

T – 1 min
S – Perimeter and area

Ans.

10. Find the circumference of a circle of radius 5cm.

(a) 32 cm (b) 42 cm

(c) 30 cm (d) 80 cm

T – 1 min
S – Perimeter and area

Ans.

True or False

11. The ratio of the circumference of a circle and its diameter is always constant.

T – 1 min
S – Perimeter and area

Ans.

12. Perimeter of a circle is called its area.

T – 1 min
S – Perimeter and area

Ans.

13. Diagonal of a square $= l^2 + b^2$

T – 1 min
S – Perimeter and area

Ans.

14. A cylinder has no vertex.

T – 1 min
S – Perimeter and area

Ans.

15. A sphere has a curved surface.

T – 1 min
S – Perimeter and area

Ans.

16. The circumference of a circle is twice the radius.

T – 1 min
S – Perimeter and area

Ans.

17. Area of parallelogram = base × height

T – 1 min
S – Perimeter and area

Ans.

18. $x^2 - y^2 = y^2 - x^2$

T – 1 min
S – Algebraic expressions

Ans.

19. If $x = 2$ then the value of $4x^2 - 4 = 12$

T – 1 min
S – Algebraic expressions

Ans.

20. $6x^2 - y^2 + 4x^2 - 3y^2 = 10x^2 - 4y^2$

T – 1 min
S – Algebraic expressions

Ans.

Fill in the blanks

21. Area of a rhombus $= \frac{1}{2} \times$ _____.

T – 1 min
S – Perimeter and area

Ans.

22. Area of triangle $= \frac{1}{2} \times$ _____ $\times$ _____.

T – 1 min
S – Perimeter and area

Ans.

23. Circumference of a circle $= \pi \times$ _____.

T – 1 min
S – Perimeter and area

Ans.

24. A term of the expression having no literal factor is called _____ term.

T – 1 min
S – Algebraic expressions

Ans.

25. Area of a right angled triangle $= \frac{1}{2} \times$ _____ .

T – 1 min
S – Perimeter and area

Ans.

26. A number whose value does not vary is said to be _____ .

T – 1 min
S – Algebraic expressions

Ans.

27. A literal which may take any value is known as _____ .

T – 1 min
S – Algebraic expressions

Ans.

28. When we multiply two or more numbers, each one of them is a _____ of the product.

T – 1 min
S – Algebraic expressions

Ans.

29. In a monomial, numerical factor is the _____ of the monomial.

T – 1 min
S – Algebraic expressions

Ans.

30. An algebraic expression having only one term is known as _____ .

T – 1 min
S – Algebraic expressions

Ans.

Find the coefficient of x in each of the following.

31. $y^2x - y$

T – 1 min
S – Algebraic expressions

Ans.

32. $7y^2 - 7xy$

T – 1 min
S – Algebraic expressions

Ans.

33. $5xy + 2yz$

T – 1 min
S – Algebraic expressions

Ans.

34. $(2y - 3) = 5\ (2y + 1)$, they $y = ?$

(a) -1 (b) 2
(c) 3 (d) 7

T – 1 min
S – Algebraic expressions

Ans.

35. $10(2 - x) = 4\ (x - 9)$

(a) 1 (b) 2
(c) 3 (d) 4

T – 1 min
S – Algebraic expressions

Ans.

36. Add, $3x + y - 52, 5y + 2x, 7x - 8y$ and $4x - 9y - 52$.

T – 1 min
S – Algebraic expressions

Ans.

37. Subtract, $12xy - 5yz - 9zx$ from $15xy + 6yz + 7zx$

T – 1 min
S – Algebraic expressions

Ans.

38. Subtract, $18y^2$ from $3y^2$

T – 1 min
S – Algebraic expressions

Ans.

39. Find the coefficient of x in $xy + 2x$.

T – 1 min
S – Algebraic expressions

Ans.

40. Add: $x^2 + y^2 + 2z^2, -2x^2 + 3y^2 - 4z^2$ and $-7x^2 - 6y^2 + 8z^2$.

T – 1 min
S – Algebraic expressions

Ans.

Questions 41–45. Complete the table.

	Base	Height	Area of parallelogram	Solutions
41.	20	_____	246 cm^2	
42.	_____	15 cm	154.5 cm^2	
43.	_____	8.4 cm	48.72 cm^2	
44.	15.6 cm	_____	16.38 cm^2	
45.	3 cm	4 cm	_____	

State which of the following are monomials, binomials and trinomials.

46. $4x-3y$

T – 1 min
S – Algebraic expressions

Ans.

47. $x+y+2$

T – 1 min
S – Algebraic expressions

Ans.

48. $a^2+ab-ac$

T – 1 min
S – Algebraic expressions

Ans.

49. $4p^2q - 4p^2q + r$

T – 1 min
S – Algebraic expressions

Ans.

50. $3abc$

T – 1 min
S – Algebraic expressions

Ans.

30 Regular Questions

Opening Window

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. Subtract $6x^2 - 7x + 5$ from the sum of $4x^2 - 5x + 7$ and $8 - 3x^2 - 4x$.

T – 1 min
S – Algebraic expressions

Ans.

52. From the sum of $3x^2 - 4xy + 8y^2$ and $2x^2 + 6xy - 2y^2$ subtract $4x^2 - 3xy - 5y^2$.

T – 1 min
S – Algebraic expressions

Ans.

53. From the sum of $4x^4 - 3x^3 + 6x^2 + 4$ and $4x^3 + 2x^2 - 3x^2 - 8$, subtract the sum of $x^4 + x^3 - 2x^2 + 1$ and $x^3 - 3x^2 + 9$.

T – 1 min
S – Algebraic expressions

Ans.

54. $9+x=-2$, $y=1$ and $z=-3$, then find the value of the following expression.
$x^2+y^2+z^2-xy-yz-zx$

T – 1 min
S – Algebraic expressions

Ans.

55. Find the value of the expression $9x^2+24x+16$, when $x=20$.

T – 1 min
S – Algebraic expressions

Ans.

56. If $x^2+\frac{1}{x^2}=18$, then find the value of:

(a) $x-\frac{1}{x}$ (b) $x^4+\frac{1}{x^4}$

T – 1 min
S – Algebraic expressions

Ans.

57. If $x^2 + \frac{4}{x^2} = 53$, then calculate $x - \frac{2}{x}$.

T – 1 min
S – Algebraic expressions

Ans.

58. Using identities, evaluate the following:
(a) $(102)^2$ (b) $(19)^2$

T – 1 min
S – Algebraic expressions

Ans.

59. Express in the form of a single algebraic expression
(a) $(a+b)(c-d)+(c-a)(a-b)+2(ac+bd)$
(b) $(a+bcd)(a^3+b^3c^3d^3)$

T – 1 min
S – Algebraic expressions

Ans.

60. Simplify $x(x+y^2+z)+y^2(x+y+z)-z(x+y^2)$ and verify it for $x=1$, $y=1$, and $z=2$.

T – 1 min
S – Algebraic expressions

Ans.

61. Find the product of $74-3v$ and $44+5v$.

T – 1 min
S – Algebraic expressions

Ans.

62. If $A=8x^2+4xy-7y^2$, $B=3y^2-4x^2-6xy$ and $C=-4x^2+2xy+4y^2$. Show that $A+B+C=0$

T – 1 min
S – Algebraic expressions

Ans.

63. The sum of two expressions is $2x^2-3y^2-2xy+y-9$. If one of them is $x^2-y^2+3xy-4y+6$, find the other expression.

T – 1 min
S – Algebraic expressions

Ans.

Solve the following equation and check your results:

64. $x-\frac{2x}{3}+\frac{x}{2}=15$

T – 1 min
S – Algebraic expressions

Ans.

65. $5(3-4x)-16(2x-5)=43$

T – 1 min
S – Algebraic expressions

Ans.

66. $\frac{4x-5}{4}-3=\frac{5x-7}{3}-4x-2$

T – 2 min
S – Algebraic expressions

Ans.

67. Solve : $\frac{2}{3}(x-5)-\frac{1}{4}(x-2)=\frac{9}{2}$.

T – 2 min
S – Algebraic expressions

Ans.

68. Solve : $\frac{2t-3}{5}+\frac{t+3}{4}=\frac{4t+1}{7}$.

T	– 2 min
S	– Algebraic expressions

Ans.

69. How many times the wheel of radius 28 cm must rotate to go 352 m?

T	– 2 min
S	– Perimeter and area

Ans.

70. A picture is painted on a card board 8 cm long and 5 cm wide such that there is a margin of 1.5 cm along each of its sides. Find the total area of the margin.

T	– 2 min
S	– Perimeter and area

Ans.

71. A verandah 1.25 m wide is constructed all along the outside of the room 5.5 m long and 4 cm wide. Find

(i) The area of the verandah

(ii)The cost of cementing the floor of the verandah at the rate of Rs. 25 per m^2

T	– 2 min
S	– Perimeter and area

Ans.

72. Find the area of a triangular field, the length of whose sides are 78 m, 50 m and 112 m.

T	– 2 min
S	– Perimeter and area

Ans.

73. Find the circumference of a circle of radius 100 cm ($\pi = 3.14$).

T	– 2 min
S	– Algebraic expressions

Ans.

74. A painting 7 cm long and 5 cm wide is painted on a card board such that there is margin of 1 cm along each of its side. Find the total area of the margin.

T	– 2 min
S	– Perimeter and area

Ans.

75. The difference between the circumference and radius of a circle is 37 cm. Find the area.

T	– 2 min
S	– Perimeter and area

Ans.

76. The area of a square *ABCD* is 36 cm^2. Find the area of the square obtained by joining the midpoints of the sides of the square *ABCD*.

T	– 2 min
S	– Perimeter and area

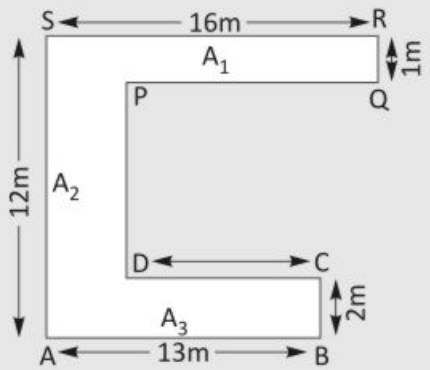
Ans.

77. The length and breadth of a rectangular field are 240 m and 75 m respectively. Find the perimeter of the field and the cost of fencing it at Rs. 1.25 per metre.

T	– 2 min
S	– Perimeter and area

Ans.

78. Calculate the area of the region in the figure given below.



T	– 2 min
S	– Perimeter and area

Ans.

79. If the circumference of a circular sheet is 154 m, find its radius. Also find the area of the sheet.

T	– 2 min
S	– Perimeter and area

Ans.

80. The minute hand of a circular clock is 15 cm long. How far does the tip of the minute hand move in 1 hour?

T	– 2 min
S	– Perimeter and area

Ans.

20 Thinking Ability Questions

Opening Window

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**

Questions 81–83. Complete the following table.

	Base	Height	Area of Trianlge	Solutions
81.	15 cm	_____	87 cm^2	
82.	_____	31.44 cm	125.6 mm^2	
83.	22 cm	_____	170.5 cm^2	

T – 3 min
S – Perimeter and area

Ans.

84. Find the area of the following parallelograms.

T – 2 min
S – Perimeter and area

Ans.

85. How many times the wheel of radius 28 cm must rotate to go 352 m?

T	– 2 min
S	– Perimeter and area

Ans.

86. Length of rectangle exceeds its breadth by 4m. If the perimeter of the rectangle is 84 m, find the length and breadth of the rectangle.

T	– 2 min
S	– Perimeter and area

Ans.

87. Abhay has a square plot of land that has been fenced with 300 m long wire. Find the length of square.

T	– 2 min
S	– Perimeter and area

Ans.

88. A sum of Rs 500 is in the form of Rs 5 and Rs 10 notes. If the total number of notes be 75, find the number of each type of notes.

T	– 2 min
S	– Algebraic expressions

Ans.

89. In a class of 35 students, the number of girls is $\frac{2}{3}$ of the boys. Find the number of boys in the class.

T	– 2 min
S	– Algebraic expressions

Ans.

90. Madhu's age is three times her son's age. 5 years ago she was five times her son's age. Find their present ages.

T	– 2 min
S	– Algebraic expressions

Ans.

91. A number is divided into two parts such that one part is 10 more than the other. If the two parts are in the ratio 5 : 3. Find the number and the two parts.

T	– 2 min
S	– Algebraic expressions

Ans.

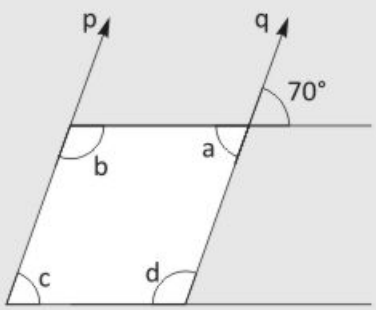
92. A total of Rs. 50000 is to be distributed among 200 persons as prizes. A prize is either Rs 500 or Rs 100. Find the number of each type of prizes.

T	– 2 min
S	– Algebraic expressions

Ans.

93. Find a, b, c and d

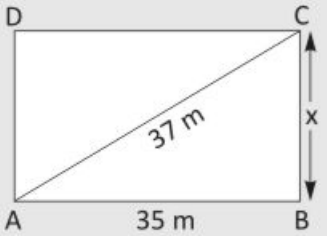
T	– 3 min
S	– Perimeter and area



Ans.

94. Find the area of a rectangular plot, one side of which measure 35 m and the diagonal 37 m.

T – 3 min
S – Perimeter and area



Ans.

95. Find the area of a rhombus, the lengths of whose diagonals are 16 cm and 24 cm.

T – 3 min
S – Perimeter and area

Ans.

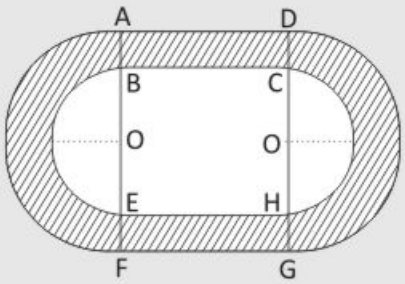
96. The base of an isosceles triangle is 48 cm and one of its equal side is 30 cm. Find the area.

T – 3 min
S – Perimeter and area

Ans.

97. An athletic track 14 m wide consists of two straight sections 120 m long joining semi circular ends whose inner radius is 35 m. The area of the region is

T – 3 min
S – Perimeter and area



Ans.

98. Find the area of the circle whose radius is r^2.

T – 3 min
S – Perimeter and area

Ans.

99. The circumference of two circles are P_1 and P_2. Find the circumference of the third circle, whose area is equal to the sum of the areas of first two circles.

T – 3 min
S – Perimeter and area

Ans.

100. Circumference 264 cm. Find area of the circle?

T	– 3 min
S	– Perimeter and area

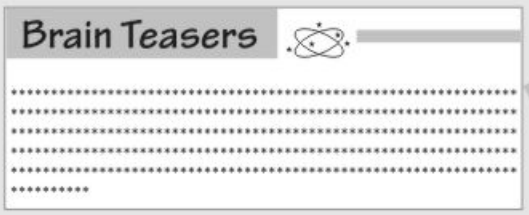
Ans.

Tools at a glance

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

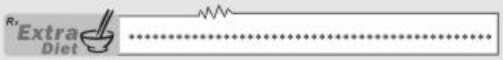
Let's Chat, the feature with suggestive topics for discussion so as to improve your capacity to debate on various topics.

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



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.



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