INFINITY THINK BEYOND.....

X MIND CURVE Mid Term Maths Test Series 2025-26

Test 04

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S no	Syllabus Covered	Chapters(In Half Yearly)	Marking Scheme
1.	Chapter 6	Triangles	20
2	Chapter 7	Coordinate Geometry	20

Note: Students/Teachers can refer to this Sample Paper for practice purpose. However, students may find or experience different exam pattern as syllabus or marking scheme may vary school to school.

MM:40	GENERAL INSTRUCTIONS	Time1.5Hrs

READ CAREFULLY ALL INSTRUCTIONS

1. **This Question Paper has 5 Sections A, B, C, D and E.**
2. **Section A has 10 MCQs carrying 1 mark each**
3. **Section B has 3 questions carrying 02 marks each.**
4. **Section C has 2 questions carrying 03 marks each.**
5. **Section D has 2 case based integrated units of assessment (04 marks each) with sub parts of the values of 1, 1 and 2 marks each respectively.**
6. **Section E has 2 questions carrying 05 marks each.**
7. **All Questions are compulsory.**
8. **This paper consists of 19 questions.**
   a. **Write your answers neatly and legibly.**
   b. **Ensure you have not left any question unanswered**

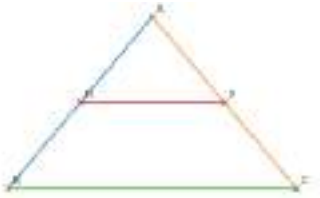
SECTION – A

Questions 1 to 10 carry 1 mark each.

1. If A(1,3) B(-1,2) C(2,5) and D(x,4) are the vertices of a parallelogram ABCD then the value of x is

(a) 3 (b) 4 (c) 0 (d) 3/2

2. In figure DE ‖ BC. IF BD=x-3, AB =2x, CE = x-2 and AC=2x+3 . Find x.



(a) 3 (b) 4 (c) 9 (d) None of these

3. In ΔABC and ΔPQR , $\frac{AB}{QR} = \frac{BC}{PR} = \frac{CA}{PQ}$,then

(a) ΔPQR ~ ΔCAB (b) ΔPQR ~ ΔABC

(c) ΔPQR ~ ΔCBA (d) ΔPQR~ΔBCA

4. If ΔABC~ ΔDEF and the perimeters of ΔABC and ΔDEF are 30 cm and 18cm respectively . If BC = 9cm then EF= ?

(a)4.5cm (b)6.3 cm (c)7.2cm (d)5.4 cm

5. Line drawn parallel to one side of triangle , through mid-point of second side divide third side in

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

6. If A (4,2), B(6,5) and C(1,4) be the vertices of ΔABC and AD is a median , then the coordinates of D are.

(a)$(5,\frac{7}{2})$ (b) $(\frac{5}{2}, 5)$ (c) $(\frac{7}{2}, \frac{9}{2})$ (d) $(\frac{5}{2}, 3)$

7. If the centroid of the triangle formed by the points (a,b) (b,c) and (c,a) is at the origin , then $a^3 + b^3 + c^3$ =

(a) 2a (b)0 (c) 3abc (d) a+b+c

8.The e distance between the points (a cosθ, 0) and (0, a sinθ) is

(a) a^2 (b) a (c) a (sinθ+ cosθ) (d)$\sqrt{a}$

Question numbers 9 and 10 are Assertion and Reason based questions

Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

(c) Assertion (A) is true, but Reason (R) is false.

(d) Assertion (A) is false, but Reason (R) is true.

9. Assertion (A): Mid-point of a line segment divides the line segment in the ratio 1:1

Reason (R): The ratio in which the point (-3,k) divides the line segment joining the points (-5,4) and (2,3) is 1:2.

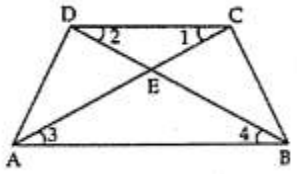
10. **Assertion (A):** Ratio in which the line 3x + 4y = 7 divides the line segment joining the points (1, 2) and (-2, 1) is 3:5.

Reason (R): The coordinates of the point P(x, y) which divides the line segment joining the points $A(x_1,y_1)$ and $B(x_2, y_2)$ in the ratio $m_1:m_2$ is $\left(\frac{m_1x_2+m_2x_1}{m_1+m_2}, \frac{m_1y_2+m_2y_1}{m_1+m_2}\right)$

SECTION – B

Questions 11 to 13 carry 2 mark each.

11. (A) In given figure ,∠ 1=∠ 2 ; ∠2 = ∠4,DE = 4;CE =x+ 1, AE = 2x + 4; BE= 4x-2, find x.

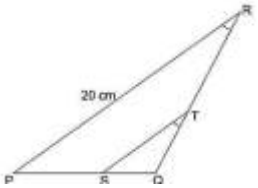


OR

(B)S and T are point on sides PR and QR of ΔPQR such that ∠P=∠RTS. Show that ΔRPQ ~ΔRTS.

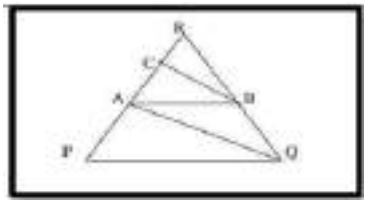
12. Find the perimeter of a triangle with vertices (0,4), (0,0) and (3,0).

13. (A)ΔPQR is shown below. ST is drawn such that ∠PRQ = ∠STQ. ST divides QR in a ratio of 2:3, then what is the length of ST?



OR

(B)Prove that AR^2 =PRXCR if PQ ∥ AB and AQ ∥ CB.



SECTION – C
Questions 14 to 15 carry 3 mark each

14 (A) In what ratio, does the &-axis divide the line segment joining the points (-4, -6) and (-1, 7) ? Find the co-ordinate of the point of division

OR

(B) If the mid-point of the line segment joining the points A(3,4) and B(k,7) is p(x, y) and also passes through 2x +2y + 1 = 0, find the value of k.

15. The diagonals of a quadrilateral ABCD intersect each other at the point O such that AO/BO = CO/DO. Show that ABCD is a trapezium

SECTION – D
Questions 16 & 17 carry 4 mark each.

16. Vijay is trying to find the average height of tower near his house. He is using the properties of similar triangles .The height of Vijay's house is 20m and casts a shadow 10m long on the ground. At the same time, the tower casts shadow 50 m long on the ground and the house of Ajay casts 20m shadow on the ground .

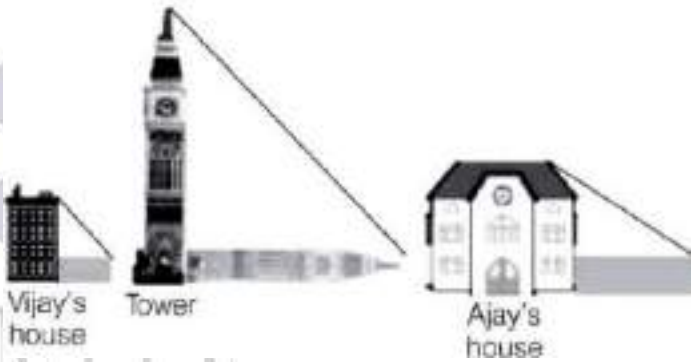
(i)What is the height of the tower?

(ii)What is the height of Ajay's house?

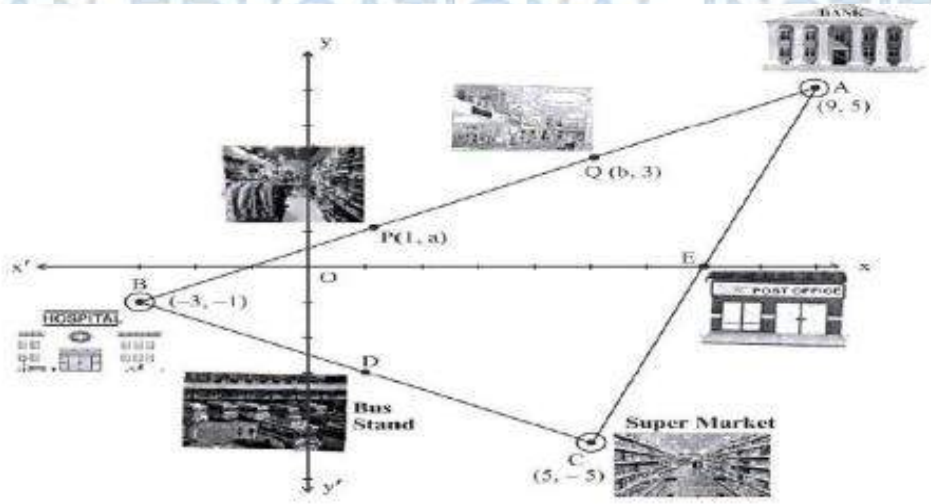
(iii)(a) What will be the length of the shadow of the tower when vijay's house casts a shadow of 12m ?

OR

(b)When the tower casts shadow of 40 m at the same time what will be the length of the shadow of Ajay's home?



17. Partha, a software engineer, lives in Jerusalem for his work. He lives in the most convenient area of the city where a bank, hospital, post office and supermarket can be easily accessed. In the graph, the bank is plotted as A (9, 5), hospital as B (– 3, – 1) and supermarket as C (5, – 5) such that A, B, C form a triangle. Based on the information given above, answer the following questions:



(i)Find the distance between the bank and the hospital.

(ii)In between the bank and the supermarket, there is a post office plotted at E which is their mid-point. Find the coordinates of E.

(iii)(a) In between the hospital and the supermarket, there is a bus stop plotted as D, which is their mid-point. If Partha wants to reach the bus stand from the bank, then how much distance does he need to cover?

OR

(b) P and Q are two different garment shops lying between the bank and the hospital, such as BP = PQ = QA. If the coordinates of P and Q are (1, a) and (b, 3) respectively, then find the values of 'a' and 'b'.

SECTION – E
Questions 18 & 19 carry 5 mark each

18. (A) If ΔABC, in which D (2, 1), E (4, 3) and F (2, 7) are the midpoints of the AB,BC and AC respectively. Find the all three vertices of ΔABC.

Or

(B) If the two vertices of an equilateral triangle be (0, 0), $(3,\sqrt{3})$ then find the third vertex

19. Prove that if a line is drawn parallel to one side of a triangle intersecting the other two sides in distinct points, then the other two sides are divided in the same ratio. Using the above theorem prove that a line through the point of intersection of the diagonals and parallel to the base of the trapezium divides the non parallel sides in the same ratio

END

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