



ANANDALAYA
ANNUAL EXAMINATION
Class : VII

Subject: Mathematics
Date : 05-03-2025

M.M: 80
Time: 3 Hours

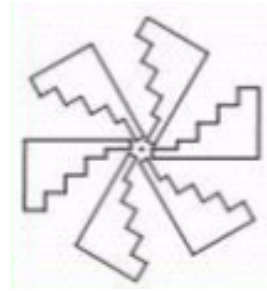
General Instructions:

- (1) This question paper has 4 sections, A, B, C and D.
- (2) Section A has 12 MCQs carrying 1 mark each.
- (3) Section B has 8 questions carrying 2 marks each.
- (4) Section C has 8 questions carrying 3 marks each.
- (5) Section D has 7 questions carrying 4 marks each. However, there are 2 case study based questions carrying 4 marks with subparts of values of 1, 1 and 2 mark each respectively.
- (6) All questions are compulsory. However, an internal choice of 3 questions of 2 marks; 3 questions of 3 marks and 2 questions of 4 marks has been provided.

SECTION-A

1. The line segment joining a vertex of a triangle to the mid-point of its opposite side is (1)
_____ of a triangle.
(A) median (B) altitude (C) bisector (D) perpendicular bisector
2. What is the circumference of a circle of radius r ? (1)
(A) $2\pi r$ (B) πr (C) πr^2 (D) $\frac{1}{2}\pi r$
3. The like terms in the given expressions a^3b , ab^3 , $-4a^2b^2$, $-8a^2b$ and $-3ab^3$ are _____. (1)
(A) a^3b , $-3ab^3$ (B) ab^3 , $-3ab^3$
(C) $-4a^2b^2$, $-8a^2b$ (D) a^3b , ab^3
4. The coefficient of x in the expression $7y - 8x + 12$ is _____. (1)
(A) 8 (B) -8 (C) 7 (D) 12
5. Express $a \times a \times a \times b \times b \times b \times b \times c \times c$ in exponential form. (1)
(A) $a^3b^4c^2$ (B) $a^4b^3c^2$ (C) $3a \times 4b \times 2c$ (D) $a^3b^4c^3$
6. The value of 2^4 is _____. (1)
(A) 8 (B) 6 (C) 16 (D) 64
7. 72980 in standard form is _____. (1)
(A) 729.8×10^4 (B) 72.98×10^4 (C) 7.298×10^3 (D) 7.298×10^4
8. A scalene triangle has _____ line(s) of symmetry. (1)
(A) one (B) two (C) three (D) no
9. A rectangle is symmetrical about _____. (1)
(A) each one of its sides
(B) each one of its diagonals
(C) a line joining the midpoints of its opposite sides
(D) none of these

10. The order of rotational symmetry for the given figure about its centre is _____.



(1)

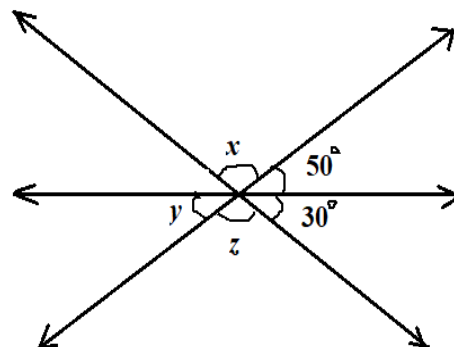
- (A) 3 (B) 4 (C) 5 (D) 6

In Q.11 and Q.12, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following options.

- (A) Both A and R are true and R is the correct explanation of A
 (B) Both A and R are true but R is not the correct explanation of A
 (C) A is true but R is false
 (D) A is false but R is true
11. (A) – The complement of 25° is 155° . (1)
 (R) – Two angles are said to be complementary if the sum of their measures are 90° .
12. (A) – The lengths of the sides of a right triangle can be 9 cm, 12 cm and 15cm. (1)
 (R) – In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

SECTION-B

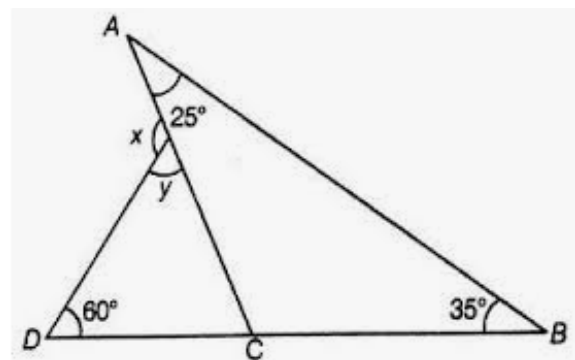
13. Solve: $2y + \frac{11}{4} = \frac{1}{3}y + 2$ (2)
14. Find the values of x , y and z in the given figure. (2)



15. (A) Two sides of a triangle are 5 cm and 9 cm. Write all the possible lengths of its third side. (2)
 Give your answer in whole numbers.

OR

- (B) Find the value of x from the adjoining figure.



16. Find: (i) 9% of ₹700 (ii) 8% of 5 litres (2)

17. (A) A bus is moving at an average speed of $46\frac{2}{3}$ km/h. How much distance will it cover in $2\frac{2}{5}$ hours? (2)

OR

- (B) How many pieces, each of length $3\frac{3}{4}$ m, can be cut from a rope of length 30 m?

18. One side of a parallelogram is 14 cm. Its perpendicular distance from the opposite side is 16.5 cm. Find the area of the parallelogram. (2)

19. (A) Find the value of the following expressions: (2)

(i) $3x^2 - 8x + 6$ when $x = -2$.

(ii) $2m^2n + 5mn^2 - 4n^3$ when $m = 0$ and $n = -1$

OR

- (B) Take away $8x^2 - 2x^3 + 3x - 1$ from $x^3 - 3x^2 + x + 1$

20. Express 6561 as an exponent of prime factors. (2)

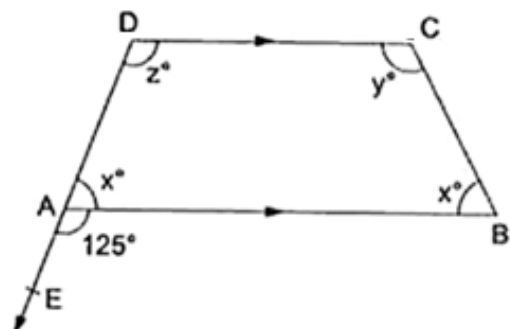
SECTION-C

21. (A) Sheela's mother is 35 years old. She is 2 years older than three times Sheela's age. What is Sheela's age? (3)

OR

- (B) Two equal sides of a triangle are 5 m less than twice the third side. If the perimeter of the triangle is 55 m, find the lengths of its sides.

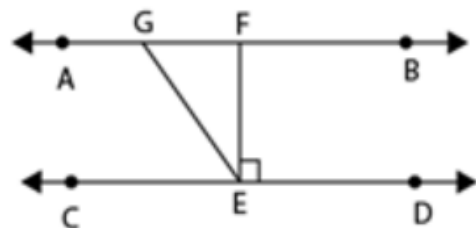
22. (A) In the given figure, $AB \parallel DC$ and DA has been produced to E so that $\angle BAE = 125^\circ$. If $\angle BAD = x$, $\angle ABC = x$, $\angle BCD = y$ and $\angle ADC = z$, find the values of x , y and z .



(3)

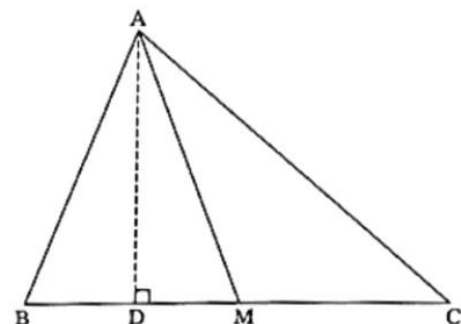
OR

- (B) In the figure, $AB \parallel CD$ and $\angle GED = 126^\circ$, find $\angle AGE$, $\angle GEF$ and $\angle FGE$.



23. The price of a sweater was ₹1450. If it is increased by 8%, find the increased price. (3)

24. In $\triangle ABC$, $\angle B = 60^\circ$, $\angle C = 40^\circ$, $AD \perp BC$ and AM bisects $\angle A$ such that D and M lie on side BC . Find $\angle DAM$.

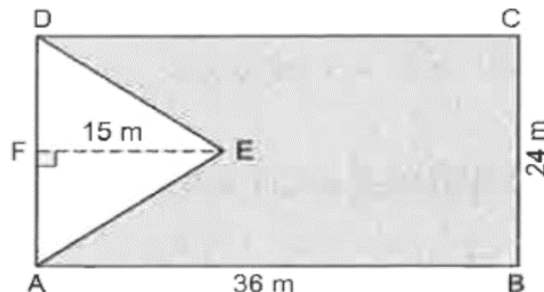


(3)

25. (i) List four rational numbers between $\frac{-4}{5}$ and $\frac{-2}{3}$. (3)
(ii) Represent $\frac{-7}{8}$ and $\frac{-1}{4}$ on the same number line.
26. (A) The inner circumference of a circular track is 220 m and the width of the track is 7 m. (3)
Calculate the cost of putting up a fence along the outer circle of the track at the rate of ₹50 per m.

OR

- (B) In the given figure, ABCD is a rectangle with length 36 m and breadth 24 m. In $\triangle ADE$, $EF \perp AD$ and EF is 15 m. Calculate the area of the shaded region.

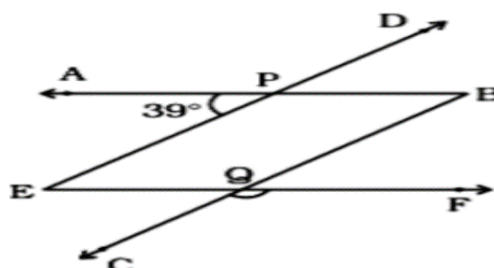


27. Simplify: $\frac{2^4 \times 5^3 \times 11^7}{55^3 \times 22^4}$ (3)
28. Complete the given table: (3)

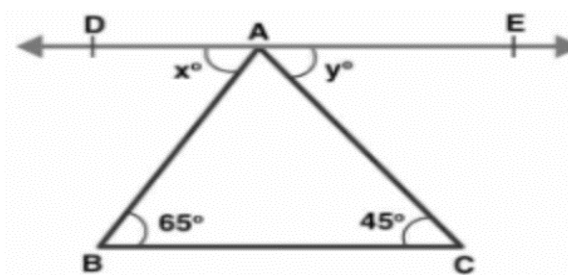
Figure	Number of lines of symmetry	Order of rotational symmetry
Regular Hexagon		
Trapezium		
Semicircle		

SECTION-D

29. (A) (i) In the adjoining figure, $AB \parallel EF$, $ED \parallel CB$ and $\angle APE = 39^\circ$. Find $\angle CQF$. (4)

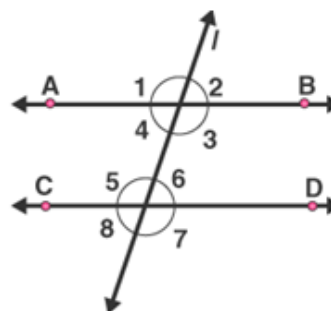


- (ii) In $\triangle ABC$ shown in the adjoining figure, $\angle B = 65^\circ$ and $\angle C = 45^\circ$ and $DE \parallel BC$. If $\angle DAB = x$ and $\angle EAC = y$, find the values of x and y .



OR

- (B) In the given figure, $AB \parallel CD$ and $\angle 1$ and $\angle 2$ are in the ratio of 3:2. Determine all the angles from 1 to 8. Give reason for your answers.



30. Solve the following equations: (4)
- (i) $2x - 3 = 5 - x$.
 - (ii) $2(x - 2) + 3(4x - 1) = 0$.

31. (A) A sum of ₹16000 earns a simple interest of ₹2560 in two years. Find the rate of interest and the amount after 2 years. (4)

OR

- (B) An electrician sells a room heater for ₹3520. He gained 10% profit. Find the cost price.

32. Simplify: (4)
- (i) $-1 + \frac{7}{-9} + \frac{11}{12}$
 - (ii) $\left(\frac{13}{8} \times \frac{12}{13}\right) + \left(\frac{-4}{9} \times \frac{3}{-2}\right)$

33. (i) Find the sum of: $9a - 2b + 6c$ and $-3a + 7b - c$. (4)
- (ii) Subtract: $8x^4 - 7x^3 - 6x$ from $-10x^4 + 5x^3 - 4x$.

34. Mr. Shah is staying on the second floor of an apartment. His grandson dropped his pen on the parapet of the window of the first floor. Mr. Shah went to the ground floor and placed a ladder against the wall in such a way that the top of the ladder reaches the parapet of the window which is 8 m above the ground. In doing so the base of the ladder was 6 m away from the wall. (4)

- (i) What kind of geometric shape is formed when the ladder is placed against the wall?
- (ii) What is the mathematical term used for the ladder in that shape so formed? Write the property used to find the length of the ladder.
- (iii) Find the length of the ladder.

OR

- (iii) If the ladder is shifted in such a way that its foot is 12 m away from the wall and assuming that the length of the ladder is 15 m, to what height will its top reach?

35. Sam and Raju were playing with a wire of length 88 cm. They used it to create different shapes. (4)
- Sam bent the wire to form a circle. Raju bent the same wire to form a square.
- (i) Find the radius of the circle formed by Sam.
 - (ii) Find the length of one side of the square made by Raju.
 - (iii) Determine the area enclosed by the circle.

OR

- (iii) Find the area of the square. Express your answer in square m.