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SUMMATIVE ASSESSMENT - II 2025 - 2026
MATHEMATICS

E-903

Class -IX

Time: $2\frac{1}{2}$ Hrs.

Total Score : 80

Instructions

- Use the first 15 minutes to read the questions and think about the answers.
- There are 26 questions, split into 4 parts *A, B, C and D*
- Answer all questions; but in questions of the type *A or B*, you need answer only one of those.
- You can answer the questions in any order, writing the correct question number
- No need to simplify irrationals like $\sqrt{2}$, $\sqrt{3}$, π etc. using approximations unless you are asked to do so.
- Answers must be explained whenever necessary.

Section- A

This section has 8 questions of score 1 each. Select the correct answer.

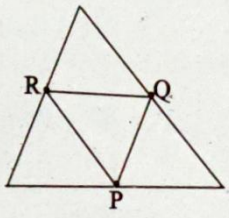
1. Sum of two numbers is 13 and their difference is 7. Which is the larger number ?

   A) 3 B) 6 C) 10 D) 20

2. Which of the following is true ?

   A) $-2+5=-3$ B) $2+-5=-3$ C) $-2+-5=-3$ D) $2-(-5)=-3$

3. In the picture P, Q, R are the midpoints of the sides of the large triangle. The area of the large triangle is 32 square centimetres, what is the area of triangle PQR ?

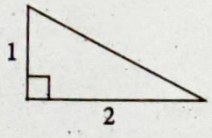
   

   A) 4 cm^2 B) 8 cm^2 C) 16 cm^2 D) 32 cm^2

4. Among the given pair of numbers, product of which pair is a natural number ?

   A) $\sqrt{2}, \sqrt{0.8}$ B) $\sqrt{0.2}, \sqrt{8}$ C) $\sqrt{2}, \sqrt{8}$ D) $\sqrt{0.2}, \sqrt{0.8}$

5. In the picture, what is the length of the hypotenuse of the right triangle ?

   A) 3 B) $\sqrt{3}$ C) $\sqrt{5}$ D) 5

6. $|x| < 2$.

Read the following statements about the number x.

(i) Value of x lies between 0 and 2.

(ii) Value of x lies between -2 and 2.

(iii) Integer values of x are $-2, -1, 0, 1, 2$.

(iv) Integer values of x are $-1, 0, 1$.

Choose the correct answer from those given below.

A) Both (i) and (ii) are true
B) Both (i) and (iv) are true
C) Both (ii) and (iii) are true
D) Both (ii) and (iv) are true

7. Read the statements below.

Statement 1: - Area of a triangle is 24 square centimetres. Area of another triangle with sides half the length of each side of this triangle is 6 square centimetres.

Statement 2: - If two triangles have their sides scaled by the same factor, the scale factor of area is the square of the scale factor of the sides.

Choose the correct answer from those given below.

A) Statement 1 is true, Statement 2 is false.
B) Statement 2 is true, Statement 1 is false.
C) Both Statement are true, Statement 2 is the reason for Statement 1.
D) Both Statement are true, Statement 2 is not the reason for Statement 1.

8. Read the statements below

Statement 1: - The circumference of a circle is π times its diameter.

Statement 2: - Area of a circle is π times the square of the radius.

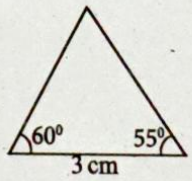
Choose the correct answer from those given below.

A) Statement 1 is true, Statement 2 is false.
B) Statement 2 is true, Statement 1 is false.
C) Both are true, Statement 2 is the reason for Statement 1.
D) Both are true, Statement 2 is not the reason for Statement 1.

Section- B

This section has 6 questions of 3 score each.

9. Draw a triangle with the same angles of the given triangle and sides scaled by $2\frac{1}{2}$.



10. $a = -5$, $b = 4$, $c = -3$. Find the following.

(i) $a - b$. (ii) $b - c$. (iii) $a + (b - c)$.

11. A. Area of a rectangle is $\sqrt{108}$ square centimetres. If one side of the rectangle is 3 centimetres, find the length of the other side up to millimetres.

OR

B. (i) Prove that $(2+\sqrt{3})(2-\sqrt{3})=1$.

(ii) Calculate $\frac{1}{2-\sqrt{3}}$ up to two decimal places.

12. $x=4$, $y=-3$.

(i) What is $|x|+|y|$?

(ii) Find $|x+y|$.

(iii) Write two different numbers x, y satisfying $|x|+|y|=|x+y|$.

13. A. Perimeter of a rectangle is 46 centimetres. Length of one side is 7 centimetres more than the other side. Find the length of the sides of the rectangle.

OR

B. Rahul bought a football boot and two jerseys for 1600 rupees. A boot costs 550 rupees more than a jersey. What is the price of each ?

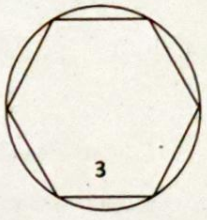
14. $p(x)=5x^2+3x+1$. Find p(1), p(0) and p(-2).

Section- C

This section has 6 questions of 4 score each.

15. Draw a triangle of perimeter 13 centimetres and sides are in the ratio 2:3:4.

16. In the picture, length of one side of the regular hexagon is 3 centimetres.



(i) What is the perimeter of the regular hexagon ?

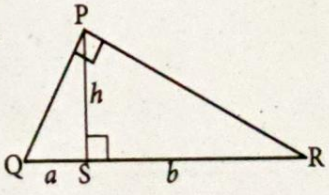
(ii) Calculate the circumference of the circle.

(iii) Calculate the difference between perimeters of regular hexagon and circle up to millimetres.

17. A. In the picture $\angle P=90^0$. The line PS is perpendicular to QR.

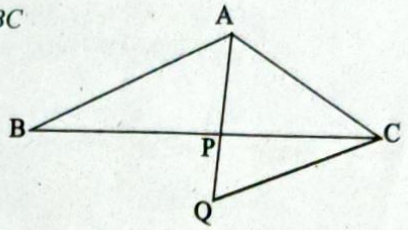
(i) Prove that angles of the triangles PQS and PRS are the same.

(ii) Prove that, if the length of the perpendicular from the square corner of the right triangle to the hypotenuse is h and it divides the hypotenuse into pieces of length a and b, then $h^2=ab$



OR

B. In the picture, AP is the bisector of $\angle A$ of triangle ABC and $AC = QC$.



(i) Prove that angles of the triangles ABP and CPQ are the same.

(ii) Prove that $\frac{AB}{AC} = \frac{PB}{PC}$.

18. (i) In the equation $y = (x-1)^2$, find y when $x = -1$.

(ii) In the equation $y = x^2 - 6x + 9$, calculate y when $x = 3$ and $x = -1$. Can the value of y be a negative number ? Why ?

19. Sides of a triangle are 9 centimetres, 10 centimetres, 17 centimetres.
(i) Find the perimeter of the triangle.
(ii) Calculate the area of the triangle.

20. A. Find x satisfying the following equations.

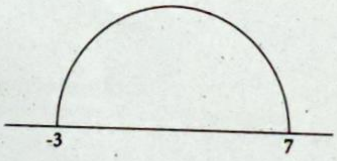
(i) $|x-2| = 3$

(ii) $|x+4| = |x-6|$

OR

B. (i) On the number line, what are the numbers denoting the points which are at a distance of 4 units from zero ?

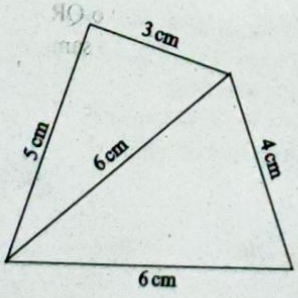
(ii) Find the diameter of the given semicircle. What is the number denoting the centre of the semicircle ?



Section- D

This section has 6 questions of 5 score each.

21. Draw a quadrilateral with the same angles of the given quadrilateral and sides are scaled by $1\frac{1}{2}$.

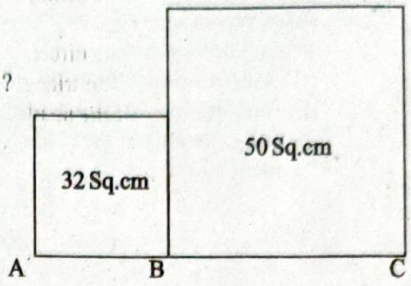


22. In the picture, two squares are joined together.

(i) What is the length of one side of the small square ?

(ii) Calculate the length of AC.

(iii) Calculate the perimeter of the figure up to millimetres.



23. A. (i) From the given table, calculate a, b, c, d.

x	y	z	$(x+y)z$	$(x-y)z$
4	3	−5	$\underline{a}$	$\underline{b}$
−6	−1	2	$\underline{c}$	$\underline{d}$

(ii) Write a pair of different integers x, y satisfying the equation $x^2 - y^2 = 0$.

OR

B. (i) Calculate y when $x = \frac{-1}{3}$ in the equation $y = \frac{1}{x}$.

(ii) Calculate y when $x = -3$ in the equation $y = \frac{1}{x+1} + \frac{1}{x-1}$.

(iii) Calculate z when $x = -4, y = -2$ in the equation $z = \frac{x}{y} - \frac{y}{x}$.

24. A. If the sides of the rectangle are decreased by one metre, its area would be 1400 square metres, if the area increased by one metre, it would be 1554 square metres.

(i) Find the area of the rectangle.

(ii) Find the perimeter of the rectangle.

OR

B. Take any month in a calendar and mark nine dates which form a square. Mark the numbers at the four corners as given.

(i) What is the difference of the diagonal products ?

(ii) Explain using algebra, why we get the same difference in all such squares.

2	3	4
9	10	11
16	17	18

s

25. A. In the picture, O is the centre of the circle with radius 6 centimetres.

(i) Find the area of the circle.

(ii) Find the area of the triangle.

(iii) Find the area of the shaded part up to two decimal places.

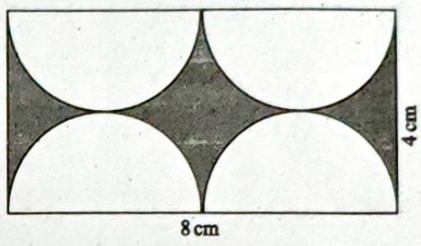
OR

B. In the picture, four semicircles of same radius are drawn in a rectangle of sides 8 centimetres and 4 centimetres.

(i) What is the radius of one semicircle ?

(ii) Calculate the area of the rectangle.

(iii) Calculate the area of the shaded part up to two decimal places.



26. The sides of a rectangular block of edges 2 centimetres, 3 centimetres, 5 centimetres are all extended by same measure to make a larger rectangular block.

(i) Denote the extended measure as x centimetres, write the lengths of three edges of the new rectangular block in terms of x.

(ii) Denote the volume of the new block as $v(x)$,write the relation between x and $v(x)$ as an equation.

(ii) Calculate $v(1)$.