A

E-903

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SUMMATIVE ASSESSMENT –TERM I 2025-26
MATHEMATICS

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, 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 $\sqrt{2}, \sqrt{3}, \pi$ 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.

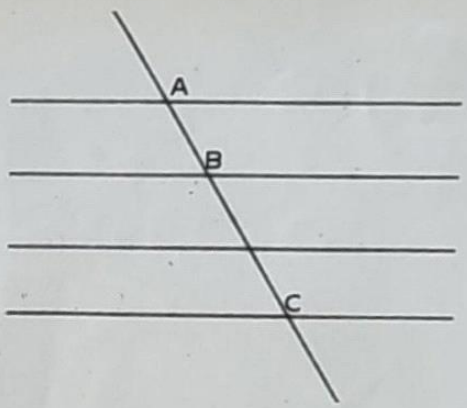
1. Which of the following equation represents the statements " three times a number added to five times another number gives 18 ? "

   A) $3x+5y=18$ B) $5x+3y=10$ C) $5x-3y=18$ D) $3x-5y=18$

2. Which of the following number lies between $\sqrt{2}$ and $\sqrt{3}$?

   A) $1\frac{1}{4}$ B) $1\frac{1}{2}$ C) $1\frac{3}{4}$ D) 2

3. In the figure, four parallel lines with same distance apart and a slanted line are drawn. If AB = 2 centimetres. then BC = ...centimetres.



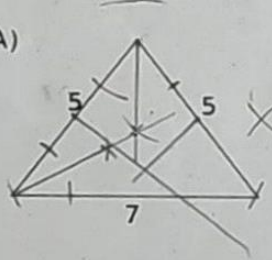
   A) 1 B) 2 C) 4 D) 6

4. $20\frac{1}{2}\times10\frac{1}{2}=20\times10+\frac{1}{2}(20+10)+.....$

   A) $\frac{1}{4}$ B) $\frac{1}{2}$ C) $\frac{3}{4}$ D) 1

5. In the figure, which of the following triangle has circumcircle on any of its side ?

A)



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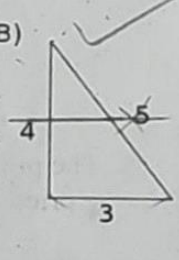

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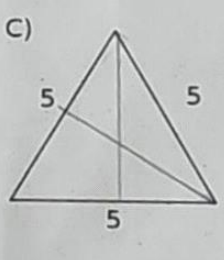
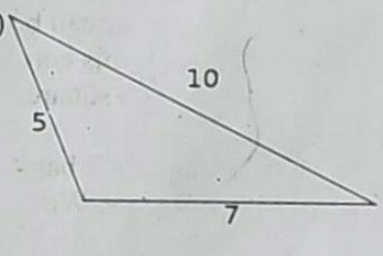


D)



6. For any four consecutive natural numbers,
   i. Sum of two numbers at the ends and sum of two numbers in the middle are equal.
   ii. Product of two numbers at the ends and product of two numbers in the middle are equal.
   iii. The difference between the product of the two numbers at the ends and product of two numbers in the middle is 2.
   iv. Sum of first two numbers and sum of next two numbers are equal.

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

7. Read the following statements.
   Statement 1: - The length of the diagonal of a square with side 1 metre is $\sqrt{2}$ metre.
   Statement 2: - If another square is drawn on the diagonal of a given square, the area of the second square is twice the area of the first square.
   Choose the correct answer from those given below.
   A) Statement 1 is true, Statement 2 is false.
   B) Statement 2 is true, Statement1 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.

8. In triangle ABC, D and E are the midpoints of the sides AB, AC respectively.
   Statement 1 : The length of BC is 8 centimetres and the length of DE is 5 centimetres.
   Statement 2 : In any triangle, the line joining the midpoints of two sides is half the length of the third side.
   Choose the correct answer from those given below.
   A) Statement 1 is true,Statement 2 is false.
   B) Statement 2 is true,Statement1 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 contains 6 questions of 3 score each.

9. Draw an equilateral triangle of perimeter 14 centimetres.

10. Sum of two numbers is 41 and their difference is 15. What are the numbers ?

11. Any odd number can be written as the difference of two perfect squares.
   (i) Using this concept, write 15 as the difference of two perfect squares.
   (ii) Draw a square of area 15 square centimetres.

12. (A) The price of 2 bags and 1 umbrella is 1150 rupees. The price of 2 bags and 3 umbrellas is 1850 rupees. What is the price of a bag? What is the price of an umbrella?

OR

(B) Of two numbers, the larger one is 6 times the smaller one. Subtracting the smaller from the

larger gives 20. What are the numbers ?

13. The algebraic form of two digit numbers ending in three is $10x + 3$

(i) Write the algebraic form of two digit numbers ending in 6.
(ii) Explain using algebra, the product of two different two digit numbers ending in 6 also ends in 6.

14. (A) (i) For any two positive numbers x, y
$(x+2)(y+2) = xy + \ldots\ldots\ldots + 4$ (Fill in the blanks)

(ii) The sum of two even numbers is 26 and their product is 144. What is the product of the even numbers next to each ?

OR

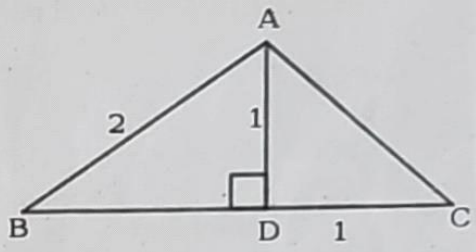
(B) The area of a rectangle with length x metre and breadth y metre is 96 square meters. When the length and breadth are increased by 1 meter , the area becomes 117 square meters. Then

(i) Find $(x+y)$.
(ii) What is the perimeter of the first rectangle ?

Section- C

This section contains 6 questions of 4 score each.

15. (A) In the figure, AD is perpendicular to BC. AB = 2 metres, AD = CD = 1 metre.

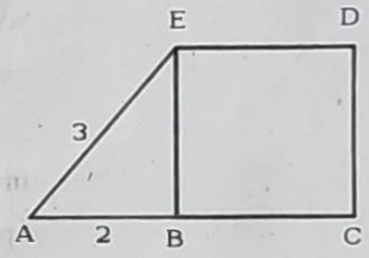


(i) AC = $\sqrt{2}$
(ii) BD = $\sqrt{3}$
(iii) Calculate the perimeter of triangle ABC, upto a centimetre.

≈ 5.23 m

OR

(B) In the figure, BCDE is a square. AB = 2 centimetres and AE= 3 centimetres. ($\sqrt{5} \approx 2.23$)

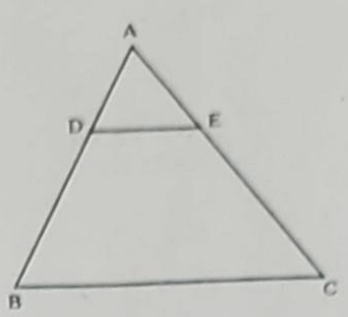


(i) What is the area of the square BCDE ?
(ii) What is the perimeter of the square BCDE ?
(iii) How much greater in the perimeter of square BCDE than the perimeter of triangle ABE ?

16. In any month of a calendar, mark four adjacent numbers which form a square.
(i) Find the difference of the diagonal products.
(ii) Explain using algebra, why the difference is the same number in all such squares.

17. Of two numbers 13 added to a number gives equal to twice the second number. 7 added to the second number gives twice the first number. What are the numbers ?

18. In the triangle ABC, BC is parallel to DE.
AB = 9 centimetres, AD = 3 centimetres, and
AC = 6 centimetres



(i) AD : AB = ...

(ii) AE : AC = ...

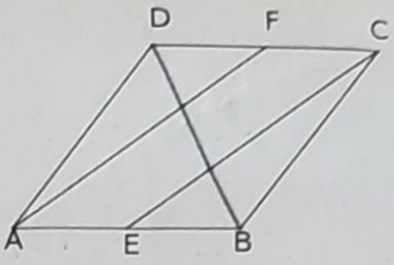
(iii) Find the length of AE and EC.

19. (A) Two times a number added to three times another number gives 52. Six times of the first number added to five times of the second number gives 108. What are the numbers ?

OR

(B) A fraction simplified after adding 1 to its numerator becomes $\frac{1}{5}$. If instead , 1 is added to the denominator and then simplified it becomes $\frac{1}{6}$. What is the fraction ?

20. (A) All sides of the quadrilateral ABCD are equal and its two corners are joined to the midpoints of sides AB, CD.

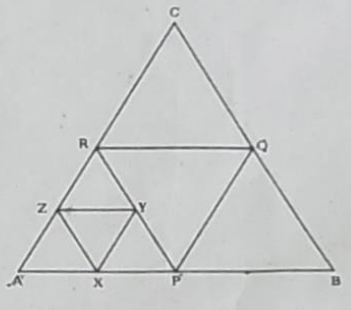


(i) Prove that the lines AE and EC are parallel.

(ii) Prove that these lines divide the diagonal BD in to three equal parts.

OR

(B) In the figure, P, Q, R are the midpoints of the sides of triangle ABC.
X, Y, Z are the midpoints of the sides of triangle APR. Area of triangle XYZ is 3 square centimetres.



(i) What is the area of triangle AXZ ?

(ii) What is the area of the parallelogram APQR ?

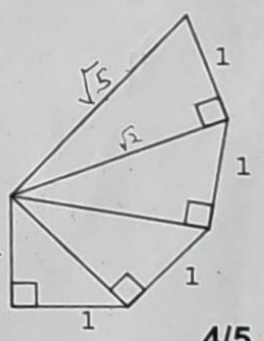
(iii) Find the area of triangle ABC.

Section- D

This section contains 6 questions of 5 score each.

21. Draw a rectangle of perimeter 17 centimetres and sides in the ratio 4:3.

22. Right triangles are drawn as seen in the figure.



(i) What is the length of the hypotenuse of the smallest right triangle?

(ii) Find the perimeter of the 4th right triangle ?

(iii) Continuing like this, how much more would be the perimeter of the 6^{th} triangle than that of the 5^{th} ?

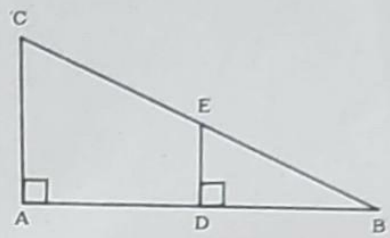
23. Two years ago, father's age was six times the age of son. After two years, this would become four times. What are their ages now ?

24. If the sides of a rectangle are increased by one meter, its area would be 336 square meters. If decreased by one meter, it would be 226 square meters.

(i) What is the area of the original rectangle ?

(ii) What is its perimeter ?

25. (A) In the figure, ABC is a right triangle. ED is the perpendicular drawn from the midpoint of BC to AB.



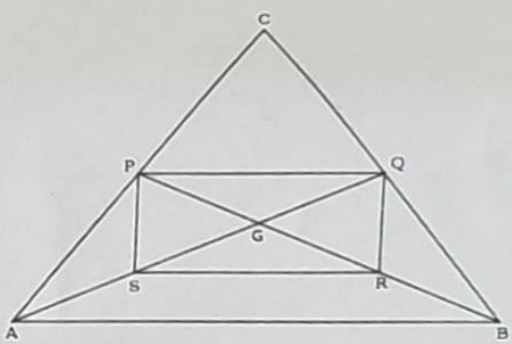
(i) Prove that ED is half of CA.

(ii) Prove that CE = BE.

(iii) Prove that the circumcentre of a right triangle is the midpoint of the hypotenuse.

OR

(B) In the figure , AQ and BP are the medians of triangle ABC. S and R are the midpoints of AG and BG. AB = 24 centimetre.



(i) AG : GQ = ...

(ii) Find the length of PQ and SR

(iii) Prove that PQRS is a parallelogram.

26. (A) The product of the larger of two numbers increased by one and the smaller decreased by one is 112. The product of the larger decreased by one and the smaller increased by one is 120.

(i) What is the product of numbers ?

(ii) What is their difference ?

OR

(B) The product of two numbers is 4 more than the product of the larger of the numbers increased by one and the smaller decreased by one.

(i) Find the difference of the numbers.

(ii) How much will be increase in the product if the larger is decreased by one and the smaller is increased by one.