

# SUMMATIVE ASSESSMENT I - 2026-27

## 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.

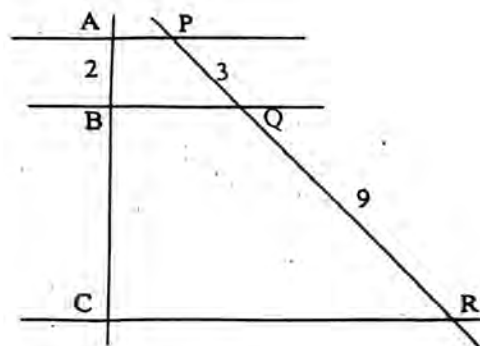
**Section- A**

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

1. The side of a square of area 10 square centimetres is  
 A)  $\sqrt{5}$  centimetres    B)  $\sqrt{10}$  centimetres    C) 5 centimetres    D) 10 centimetres

2.  $(x+3)(y+3) = xy + 3(x+y) +$  \_\_\_\_\_  
 A) 3    B) 6    C) 9    D) 12

3. In the picture, the lines AP, BQ, CR are parallel.  
 AB = 2 centimetres, PQ = 3 centimetres,  
 QR = 9 centimetres, BC = \_\_\_\_\_



- A) 8 centimetres    B) 4 centimetres  
 C) 5 centimetres    D) 6 centimetres
4. There are 50 balls, blue and yellow in a box. Number of blue balls is 10 more than yellow. Number of yellow balls in the box is,  
 A) 40    B) 30    C) 25    D) 20
5. Read the statements given below.  
 (i) We can draw three medians for a triangle.  
 (ii) The three medians of a triangle have same length.  
 (iii) All the medians of a triangle pass through a single point.  
 (iv) The medians of a triangle always pass through the orthocenter.

Which of the following statements are correct about the medians of a triangle ?

- A) (i) and (ii)    B) (i) and (iii)  
 C) (ii) and (iv)    D) (ii) and (iii)

6. A number leaves remainder 2 and another number leaves remainder 3 on division by 5. Then the remainder got by dividing product of these numbers by 5 is  
 A) 1                      B) 2                      C) 3                      D) 6

7. Read the following statements.

**Statement 1:** The length of the diagonal of a square of sides 1 unit cannot be expressed as a fraction.

**Statement 2:** The square of any fraction is not equal to 2.

Choose the correct answer from the following.

- A) Statement 1 is true , Statement 2 is false.  
 B) Statement 1 is false , Statement 2 is true.  
 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. Read the following statements.
- Statement 1:** To divide a thin wire into 8 equal pieces, place it across nine equidistant parallel lines.
- Statement 2:** Parallel lines which cut one line into equal pieces, cut all lines into equal pieces.
- Choose the correct answer from the following.
- A) Statement 1 is true , Statement 2 is false.  
 B) Statement 1 is false , Statement 2 is true.  
 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.

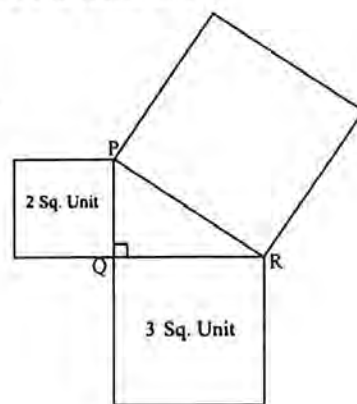
### **Section- B**

**This section contains 6 questions of 3 score each.**

9. Draw an equilateral triangle of perimeter 10 centimetres.
10. The sum of two numbers is 33 and their difference is 15. What are the numbers ?

11. (A) In the picture, areas of two small squares are 2 square units and 3 square units.

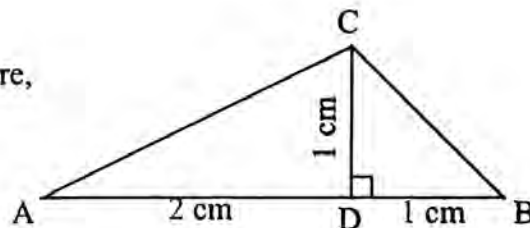
- (i) Find the area of the third square.  
 (ii) How much more is the sum of the perpendicular sides of triangle PQR than the hypotenuse ?



**OR**

- (B) In the picture, AD=2 centimetres, BD=1 centimetre, CD= 1 centimetre.

- (i) What is the length of BC ?  
 (ii) Calculate the perimeter of triangle ABC.



12. The price of three bats and five balls is 950 rupees. The price of three bats and nine balls is 1110 rupees. What is the price of a bat ? What is the price of a ball ?
13. (A) The product of two natural numbers is 1540 and their sum is 79 .Calculate the product of the numbers just after each.

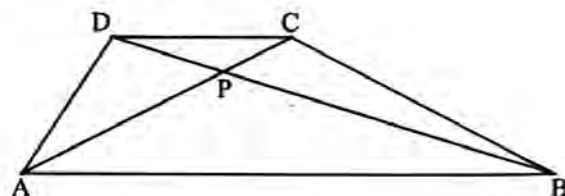
**OR**

(B) Prove that for any four consecutive natural numbers, the product of the two numbers in the middle is two more than the product of the two numbers at the ends.

14. In the picture, ABCD is a trapezium.

AP:PC=3:1 ,BD=12 centimetres.

Calculate the length of BP and PD.



### Section- C

**This section contains 6 questions of 4 score each.**

15. Even numbers are arranged as shown below.

|    |    |    |    |
|----|----|----|----|
| 2  | 4  | 6  | 8  |
| 10 | 12 | 14 | 16 |
| 18 | 20 | 22 | 24 |
| 26 | 28 | 30 | 32 |

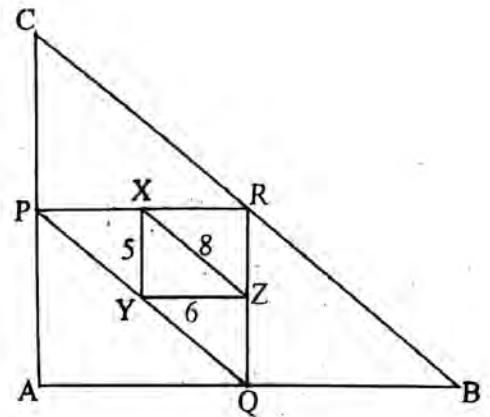
- (i) Mark any square of four adjacent numbers from this table and calculate the difference of the diagonal products.
- (ii) Explain using algebra, why we get the same difference for any such square.
16. (i) Write 13 as the difference of the squares of two odd numbers.
- (ii) Draw a square of area 13 square centimetres.
17. (A) The perimeter of a rectangle is 36 centimetres. Another rectangle with thrice the length and five times the breadth has perimeter 136 centimetres.
- (i) Form two equations based on the given statements.
- (ii) Calculate the length and breadth of first rectangle.

**OR**

(B) A fraction simplified after adding two to its numerator becomes  $\frac{1}{2}$ . If instead, one subtracted from denominator and then simplified, it becomes  $\frac{1}{3}$ . What is the fraction ?

18. In the picture, P, Q, R are the midpoints of the sides of triangle ABC.  
X, Y, Z are the midpoints of the sides of triangle PQR.  
XY = 5 centimetres, YZ = 6 centimetres, XZ = 8 centimetres.

- PQ = .....
- Find the perimeter of triangle PQR.
- How many times the area of triangle XYZ is the area of triangle ABC?

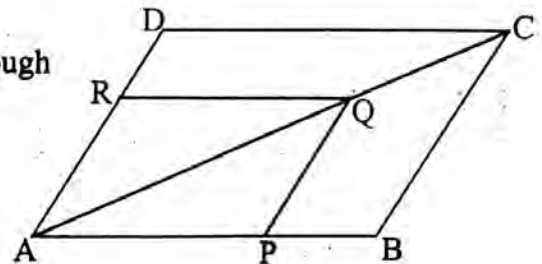


19. The perimeter of a rectangle is 44 centimetres and its area is 112 square centimetres. A new rectangle is formed by decreasing the length and breadth 4 centimetres each.

- Find the perimeter of the new rectangle.
- Find the area of the new rectangle.

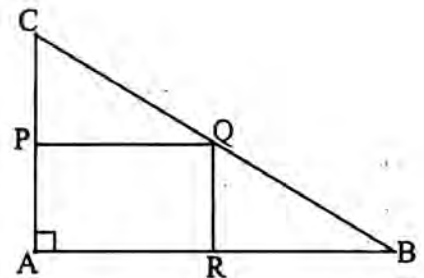
20. (A) In the picture, in parallelogram ABCD, the line through the point P on AB parallel to BC meets AC at Q. The line through Q parallel to AB meets AD at R. Using triangles ABC and ACD,

prove that  $\frac{AP}{PB} = \frac{AR}{RD}$ .



OR

- (B) A quadrilateral is drawn with the midpoints of the sides of a right triangle and its square corner as vertices.  
  - Prove that this quadrilateral is a rectangle
  - What fraction of the area of triangle ABC is the area of the rectangle?

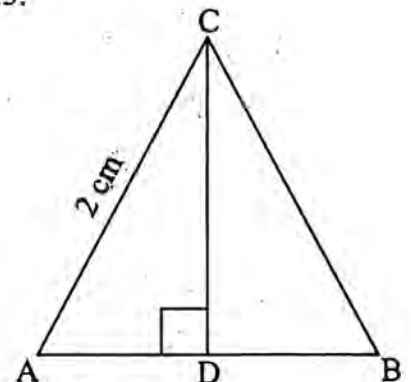


### Section- D

This section contains 6 questions of 5 score each.

21. Draw a rectangle of perimeter 20 centimetres and sides in the ratio 4:3.

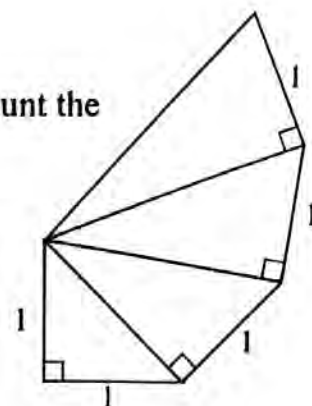
22. (A) In the picture, triangle ABC is an equilateral triangle.  
AC = 2 centimetres.  
  - Find the length of CD.
  - Calculate the perimeter of triangle ACD, correct to millimetre.
  - How much more is the perimeter of triangle ABC than the perimeter of triangle ACD?



OR

(B) In the picture, right triangles are drawn in a specific pattern. If you count the triangles from the bottom,

- Find the hypotenuse of the first right triangle.
- Find the perimeter of the second right triangle correct to millimetre.
- Find the lengths of the sides of the tenth triangle in this pattern.



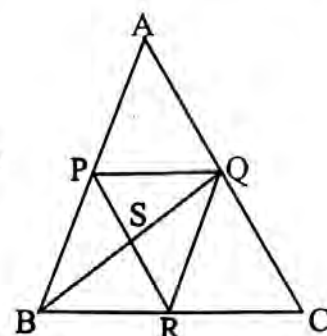
23. The product of the larger of two numbers increased by one and the smaller number decreased by one is 390. The product of larger number decreased by one and the smaller increased by one is 408.

- Find the product of the numbers.
- Find the difference of the numbers.

24. (A) In the picture, triangle PQR is drawn by joining the midpoints of the sides of triangle ABC.

BQ is the median of triangle ABC.

Prove that the median BQ bisects the line PR.



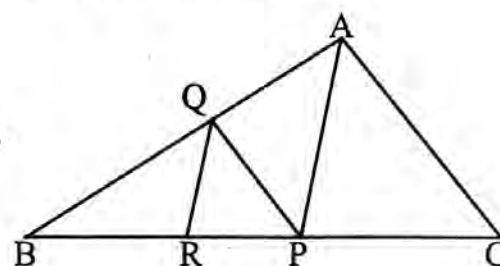
OR

(B) In triangle ABC, the line parallel to AC through the point P on BC, meets AB at Q.

The line parallel to AP through Q meets BC at R.

BQ = 6 centimetres, QA = 4 centimetres.

- $BP:PC = \dots\dots\dots$
- If  $BC = 15$  centimetres, find the lengths of BP and PC.
- What is  $BR:RP$ ?



25. The price of seven bags and three umbrellas is 3690 rupees. The price of three bags and seven umbrellas is 3010 rupees.

- Write two equations based on the given statements.
- Find the price of a bag. Find the price of an umbrella.

26. (A) When each of two numbers are increased by two, the product becomes 1053 and when each is decreased by two, the product becomes 805.

- What is the product of the numbers?
- What is the sum of the numbers?

OR

(B) The length of a rectangle is decreased by one metre and the breadth increased by one metre, the area would increase by 16 square metres.

- What is the difference between the length and breadth of the first rectangle?
- If the length is increased by one and the breadth is decreased by one, by how much will the area decrease?