SUMMATIVE ASSESSMENT TERM - TERM I 2025-26

Sample Question Paper

Mathematics

Class 9

Time : $2\frac{1}{2}$ Hours
Score : 80

Instructions

- Use the first 15 minutes to read the questions and think about the answers
- There are 26 questions, split into four 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
- Irrational numbers like $\sqrt{2}, \sqrt{3}$ or π can be written as they are, without using approxi-mate rational values, unless otherwise specified
- Answers must be explained, whenever necessary

Section A

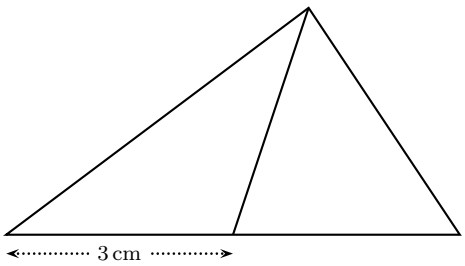
*This section has **8 questions** of **score 1** each*

Select the correct answer

(1) Using $40 \times 80 = 3200$, we calculate 41×81 as

(A) $3200 + 40 + 80$
(B) $3200 + 40 + 1$
(C) $3200 + 40 + 80 + 1$
(D) $3200 + 10$

(2) The picture shows a triangle and one of its medians. What is the length of the bottom side of the triangle in centimetres?

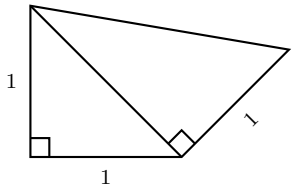


(A) 3 (B) 4.5 (C) 5 (D) 6

(3) The perimeter of a rectangle is 40 centimetres and one side is 10 centimetres longer than the other. Which equation below denotes this information?

(A) $2x + 10 = 40$ (B) $x + 5 = 20$ (C) $2x + 10 = 20$ (D) $x + 10 = 20$

(4) What is the length of the fourth side of the quadrilateral in the picture?

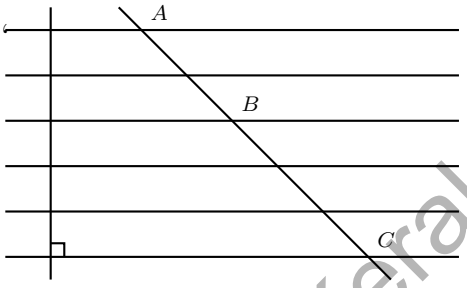


(A) 2 (B) 3 (C) $\sqrt{3}$ (D) $\sqrt{2}$

(5) The sum of two numbers is 19 and their difference is 5. What is the larger number?

(A) 12 (B) 10 (C) 24 (D) 7

(6) In the picture, the horizontal lines are parallel to each other and at equal distance apart. The slanted line cuts some of these at A, B, C. What is $AB : BC$?



(A) 2 : 5 (B) 5 : 2 (C) 2 : 3 (D) 3 : 2

(7) Read the two statements below:

Statement A : 2 is not the square of any natural number or fraction

Statement B : 2 is the square of a number between 1 and 2

Now choose the correct answer from those given below:

(i) A is true, B is false

(ii) A is false, B is true

(iii) Both are true and B is the reason for A

(iv) Both are true and B is not the reason for A

(8) Read the two statements below:

Statement A : The triangle formed by joining the midpoints of the sides of a triangle is $\frac{1}{4}$ of the original triangle

Statement B : Three or more parallel lines cut any two lines in the same ratio

Now choose the correct answer from those given below: Now choose the correct answer from those given below:

(i) A is true, B is false

(ii) A is false, Bis true

(iii) Both are true and B is the reason for A

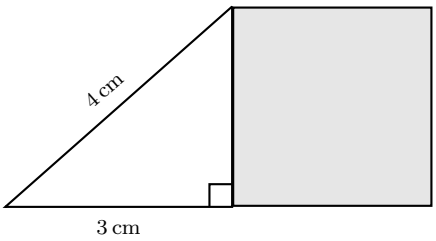
(iv) Both are true and B is not the reason for A

Section B

*This section has **6 questions** of **score 3** each*

(9) (i) What is the area of the square in the picture?

(ii) Draw a square of area 11 square centimetres

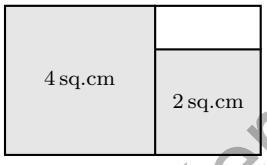


(10) (i) $(x+1)(y+1) = xy + \cdots$

(ii) The sum of two natural numbers is 40 and their product is 375. What is the product of the two natural numbers next to each?

(iii) What is the product of the natural numbers 1 less than each?

(11) (A) The area of the larger square in the picture is 4 square centimetres and the area of the smaller square is 2 square centimetres.



(i) What is the length of a side of the larger square? And that of the smaller square?

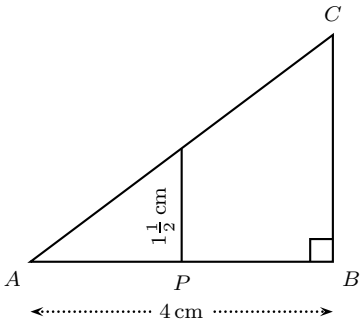
(ii) Calculate the length of the bottom side of the rectangle, correct to two decimal places

OR

(B) (i) What is the height of an equilateral triangle of sides 2 centimetres?

(ii) Calculate the lengths of the sides of an equilateral triangle of height 3 centimetres?

(12) (A) In the picture, P and Q are the mid-points of the sides AB and AC of the triangle ABC

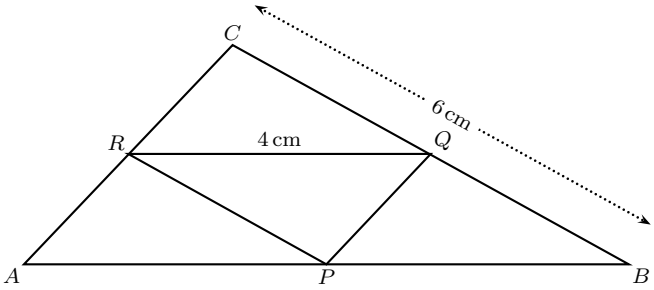


(i) What is the length of BC?

(ii) Calculate the length of PC

OR

(B) In the picture, P, Q, R are the mid-points of the sides of the triangle ABC. The perimeter of the triangle ABC is 18 centimetres.



(i) What is the length of AB?

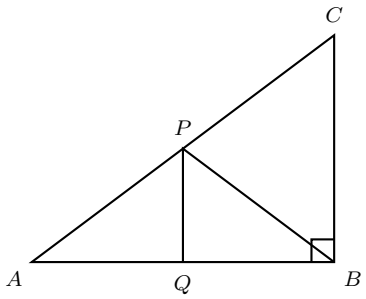
(ii) Calculate the length of PQ

(13) The price of 2 bulbs an 5 batteries is 320 rupees and the price of 2 bulbs and 8 batteries is 440 rupees

(i) What is the price of a battery?

(ii) What is the price of a bulb?

(14) In the picture, P, Q are the midpoints of AB and AC



(i) Prove that the length of PQ is half that of BC

(ii) Prove that $PA = PB = PC$

Section C

*This section has **6 questions** of **score 4** each*

(15) (A) The picture shows the square formed by dates on a calendar sheet for a month

5	6
?	13

(i) Write the missing date

(ii) Prove that in any such square of four dates, the difference of the diagonal products is 7

OR

(B) (i) Write a pair of numbers which can be the lengths of the sides of a rectangle of perimeter 60 centimetres

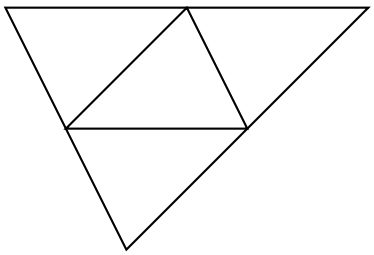
(ii) The perimeter of a rectangle is 60 centimetres and its area is 90 square centimetres. Calculate the perimeter and area of the rectangle with lengths of sides 2 centimetres less than that of this rectangle

(16) The price of 2 notebooks and 3 pens is 95 rupees. The price of 5 notebooks and 2 pens is 210 rupees. Form equations and calculate:

(i) The price of a notebook

(ii) The price of a pen

(17) In the picture, the sides of the larger triangles are lines through the vertices of the smaller triangle, parallel to the opposite sides. Use the results given below to show that the lines from the vertices of the smaller triangle to the opposite sides meet at a point



(i) A quadrilateral with both pairs of opposite sides parallel is a parallelogram

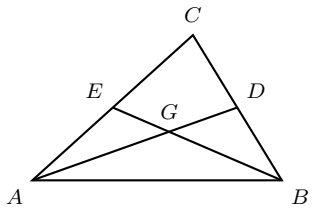
(ii) Opposite sides of a parallelogram are of the same length

(iii) In any triangle, the perpendicular bisectors of the sides meet at a point

(18) Between which pair of numbers give below is $\sqrt{2}$? Why?

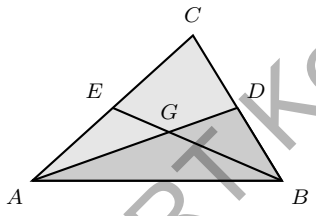
(A) $\left(\frac{4}{3}, \frac{3}{2}\right)$ (B) $\left(\frac{3}{2}, \frac{5}{3}\right)$ (C) $\left(\frac{7}{6}, \frac{5}{4}\right)$ (D) $\left(\frac{2}{3}, \frac{4}{5}\right)$

(19) In the picture, the medians AD and BE of triangle ABC intersect at G



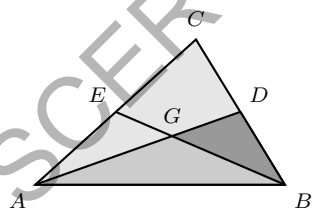
(i) What fraction of the length of AD is the length of AG?

(ii) What fraction of the area of ABD is the area of ABC?

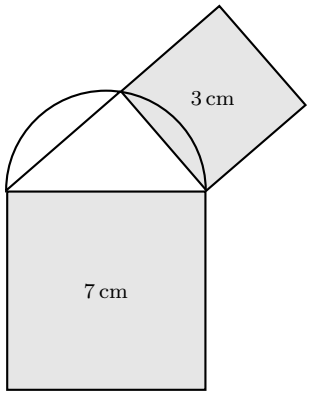


(iii) What fraction of the area of ABD is the area of ABG?

(iv) What fraction of the area of ABC is the area of ABG?



(20) (A) In the picture, a triangle is drawn joining the ends of a diameter of a semicircle to a point on it and squares are drawn on two sides of the triangle

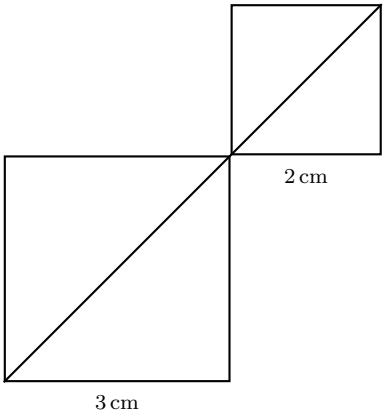


(i) Calculate the lengths of the sides of the squares

(ii) Calculate the perimeter of the triangle

OR

(B) The picture shows two squares



(i) Calculate the lengths of the diagonals of the two squares

(ii) **Calculate** the perimeters of the right triangles

Section D

*This section has **6 questions** of **score 5** each*

(21) (A) When 2 is added to the numerator of a fraction and the fraction reduced to lowest terms, we get $\frac{1}{4}$. When 2 is added to the denominator and the fraction reduced to lowest terms, we get $\frac{1}{5}$. What is the fraction

OR

(B) 5 times a number added to 3 times another number gives 62. 2 times the second number subtracted from 4 times the first gives 10

(i) Write these facts as two equations

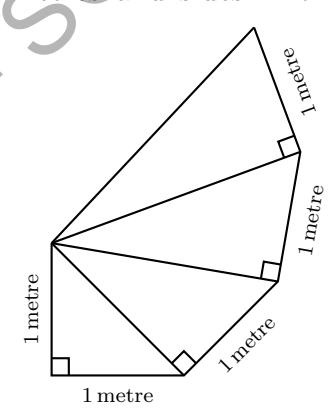
(ii) Find the numbers

(22) (i) Divide a line 13 centimetres long in the ratio 2 : 3 : 4

(ii) Use it to draw a triangle of perimeter 13 centimetres and sides in the ratio 2 : 3 : 4

(23) (i) Calculate the diagonals of each right triangle in the picture

(ii) How much larger is the perimeter of the tenth triangle than that of the ninth?



(24) (i) 10 and 19 leave remainder 1 on division by 3. What is the remainder on dividing their product by 3?

(ii) Prove that if two numbers leave remainder 2 on division by 3, then the product of these numbers leave remainder 1 on division by 3

(iii) Write two numbers whose product leaves a remainder 2 on division by 3. What is the remainders if each is divided by 3?

(25) (i) Write a two-digit numbers with sum of digits 13

(ii) The sum of the digits of a two-digit number is 13 and the number got by reversing the digits is 27 more than the number. What is the number?

(26) (A) If the sides of a rectangle are decreased by one metre, the area becomes 551 square centimetres. If instead, each side is increased by one metre, the area becomes 651 square centimetres

(i) What is the area of the rectangle?

(ii) What is its perimeter?

(iii) What are the lengths of its sides?

OR

(B) When two numbers are increased by 1 and multiplied, the product is 285; when the numbers are decreased by 1 and multiplied, the product is 221

(i) What is the product of the numbers?

(ii) What is the sum of the numbers?

(iii) What are the numbers?