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SUMMATIVE ASSESSMENT – TERM II, 2026–27

MATHEMATICS (English Medium)

SET 1

Standard: IX **Time: 2½ Hours**

Total Score: 80

Instructions

- Use the first 15 minutes to read the questions and think about the answers.
- There are 26 questions, split into four sections A, B, C and D.
- Answer all questions; in questions of the type A or B, answer only one of them.
- 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 wherever necessary.

Section A

This section has 8 questions of score 1 each. Select the correct answer. **(8 × 1 = 8)**

1. If $x + y = 20$ and $x - y = 4$, what is x? (1)

A) 8 B) 10 C) 12 D) 16

2. Which of the following is true? (1)

A) $|-7| = -7$ B) $|-3| + |4| = 1$ C) $|-5| - |5| = 0$ D) $-|-2| = 2$

3. The sides of a triangle are 3 cm, 4 cm and 5 cm. The longest side of a similar triangle is 15 cm. What is its perimeter? (1)

A) 12 cm B) 24 cm C) 36 cm D) 45 cm

4. The product of which pair is a natural number? (1)

A) $\sqrt{2}$, $\sqrt{3}$ B) $\sqrt{3}$, $\sqrt{12}$ C) $\sqrt{5}$, $\sqrt{2}$ D) $\sqrt{2}$, $\sqrt{6}$

5. The two shorter sides of a right triangle are 1 cm and 3 cm. What is the length of its hypotenuse? (1)

A) 2 cm B) $\sqrt{8}$ cm C) $\sqrt{10}$ cm D) 4 cm

6. $|x - 1| < 3$. Read the following statements about the number x. (1)

(i) x lies between −2 and 4.

(ii) x lies between −3 and 3.

(iii) The integer values of x are −1, 0, 1, 2, 3.

(iv) The integer values of x are −2, −1, 0, 1, 2, 3, 4.

A) Both (i) and (iii) 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. (1)

Statement 1: When each side of a triangle is made three times as long, its area becomes nine times.

Statement 2: If all the sides of a triangle are scaled by the same factor, its area is scaled by the square of that factor.

A) Statement 1 is true, Statement 2 is false.

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B) Statement 1 is false, Statement 2 is true.

C) Both statements are true, and Statement 2 is the reason for Statement 1.

D) Both statements are true, but Statement 2 is not the reason for Statement 1.

8. Read the statements below. (1)

Statement 1: The ratio of the circumference to the diameter is the same for all circles.

Statement 2: The area of a circle of radius r is $2\pi r$.

A) Statement 1 is true, Statement 2 is false.

B) Statement 1 is false, Statement 2 is true.

C) Both statements are true, and Statement 2 is the reason for Statement 1.

D) Both statements are true, but Statement 2 is not the reason for Statement 1.

Section B

This section has 6 questions of score 3 each. **(6 × 3 = 18)**

9. Draw a triangle of sides 4 cm, 5 cm and 6 cm. Draw another triangle with the same angles and sides scaled by 1½. (3)

10. $a = -3$, $b = 5$, $c = -2$. Find the following. (3)

(i) $a + b$

(ii) $a - c$

(iii) $bc - a$

11 A. The area of a square is 50 square centimetres. Find the length of its side up to millimetres. (3)

OR

11 B. (i) Prove that $(\sqrt{5} + \sqrt{3})(\sqrt{5} - \sqrt{3}) = 2$. (1)

(ii) Write $1 \div (\sqrt{5} - \sqrt{3})$ in a form without a square root in the denominator. (2)

12. $x = 6$, $y = -8$ (3)

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

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

(iii) Write two different numbers x and y such that $|x| + |y| = |x + y|$.

13 A. The perimeter of a rectangle is 56 centimetres. Its length is 4 centimetres more than its breadth. Find the length and the breadth. (3)

OR

13 B. The price of 3 pens and 2 notebooks is 110 rupees. The price of 2 pens and 3 notebooks is 115 rupees. What is the price of each? (3)

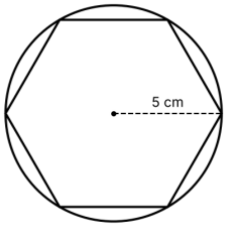
14. $p(x) = 2x^2 - 3x + 4$. Find $p(0)$, $p(2)$ and $p(-1)$. (3)

Section C

This section has 6 questions of score 4 each. **(6 × 4 = 24)**

15. Draw a triangle of perimeter 15 centimetres with sides in the ratio 3 : 5 : 7. (4)

16. A regular hexagon is drawn with its vertices on a circle of radius 5 centimetres.



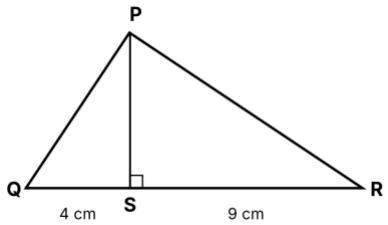
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(i) What is the perimeter of the hexagon? (1)

(ii) Calculate the circumference of the circle. (2)

(iii) What is the difference between the circumference of the circle and the perimeter of the hexagon? (Take $\pi = 3.14$) (1)

17 A. In the figure, $\angle P = 90°$ and PS is perpendicular to QR. QS = 4 cm and SR = 9 cm.



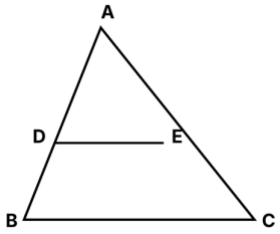
(i) Prove that the angles of triangles PQS and RPS are the same. (1)

(ii) Find the length of PS. (2)

(iii) Find the length of PQ. (1)

OR

17 B. In triangle ABC, DE is parallel to BC. AD = 4 cm, DB = 6 cm and AE = 6 cm.



(i) Prove that the angles of triangles ADE and ABC are the same. (1)

(ii) Find the length of EC. (2)

(iii) If BC = 15 cm, find DE. (1)

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

(ii) In the equation $y = x^2 - 4x + 4$, calculate y when $x = 2$ and $x = -1$. (2)

Can the value of y be a negative number? Why? (1)

19. The sides of a triangle are 13 cm, 14 cm and 15 cm.

(i) Find the perimeter of the triangle. (1)

(ii) Calculate the area of the triangle. (3)

20 A. Find x satisfying the following equations.

(i) $|x - 3| = 5$ (2)

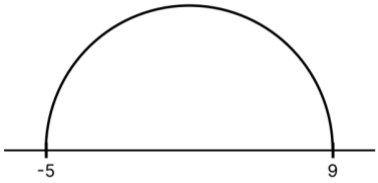
(ii) $|x + 2| = |x - 6|$ (2)

OR

20 B. (i) On the number line, what are the numbers that are at a distance of 5 from 2? (2)

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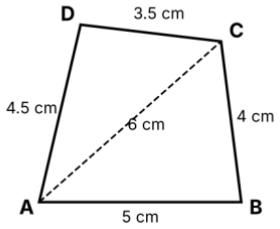
(ii) A semicircle is drawn on the number line as shown. Find its diameter. What number denotes its centre? (2)



Section D

This section has 6 questions of score 5 each. **(6 × 5 = 30)**

21. Draw the quadrilateral ABCD shown in the rough figure. Then draw a quadrilateral with the same angles and sides scaled by 1½. (5)



22. Answer the following.

(i) Draw a line of length √5 centimetres. (1)

(ii) Find √5 + √20. (1)

(iii) Find √12 × √3. (1)

(iv) Find $(\sqrt{3} + 1)^2$. (2)

23 A. A wire 44 centimetres long is bent into a circle. (Take π = 22/7)

(i) What is the radius of the circle? (1)

(ii) What is the area of the circle? (2)

(iii) If the same wire is bent into a square, which shape will have the greater area? By how much? (2)

OR

23 B. The minute hand of a clock is 7 centimetres long. (Take π = 22/7)

(i) How much distance does its tip travel in one hour? (2)

(ii) How much distance does it travel in 15 minutes? (1)

(iii) What is the area swept by the minute hand in 15 minutes? (2)

24. $p(x) = x^3 - 2x^2 + x + 1$

(i) Find p(1). (1)

(ii) Find p(−1). (1)

(iii) Find p(2). (1)

(iv) Write the polynomial $p(x) + x^2 - x$ in its simplest form. (2)

25 A. The sum of the digits of a two-digit number is 9. If the digits are interchanged, the new number is 27 more than the original number. Find the number. (5)

OR

25 B. Five years ago, a father's age was seven times his son's age. After five years, the father's age will be three times the son's age. Find their present ages. (5)

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26. The sides of two similar triangles are in the ratio 2 : 3.

(i) What is the ratio of their perimeters? (1)

(ii) What is the ratio of their areas? (1)

(iii) If the area of the smaller triangle is 20 square centimetres, what is the area of the larger one? (1)

(iv) A triangle has sides 6 cm, 8 cm and 10 cm. Is it a right triangle? Find the area of a triangle with the same angles and sides scaled by 1½. (2)

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