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SUMMATIVE ASSESSMENT – TERM II, 2026–27

MATHEMATICS – ANSWER KEY (English Medium)

SET 1

Standard: IX **Time: 2½ Hours**

Total Score: 80

Award scores for correct steps even if the final answer is wrong. Accept any correct alternative method.

Q. No.	Answer / Scoring indicators	Score
1	C) 12	1
2	C) $\|-5\| - \|5\| = 0$	1
3	C) 36 cm (scale factor 3; 12 × 3)	1
4	B) $\sqrt{3} \times \sqrt{12} = \sqrt{36} = 6$	1
5	C) $\sqrt{10}$ cm	1
6	A) Both (i) and (iii) are true	1
7	C) Both true; Statement 2 is the reason for Statement 1	1
8	A) Statement 1 true, Statement 2 false	1
9	Correct triangle 4, 5, 6 cm (1); new sides 6 cm, 7.5 cm, 9 cm (1); correct construction (1)	3
10	(i) $-3 + 5 = 2$ (1) (ii) $-3 - (-2) = -1$ (1) (iii) $5 \times (-2) - (-3) = -10 + 3 = -7$ (1)	3
11 A	Side = $\sqrt{50}$ (1); $7.07^2 = 49.98\ldots$, $7.08^2 = 50.12\ldots$ (1); side ≈ 7.07 cm, that is about 7.1 cm (71 mm) (1)	3
11 B	(i) $(\sqrt{5})^2 - (\sqrt{3})^2 = 5 - 3 = 2$ (1) (ii) Multiply numerator and denominator by $(\sqrt{5} + \sqrt{3})$: $(\sqrt{5} + \sqrt{3}) \div 2$ (2)	3
12	(i) $6 + 8 = 14$ (1) (ii) $\|6 - 8\| = \|-2\| = 2$ (1) (iii) Any two numbers of the same sign, e.g. 3 and 5, or −2 and −7 (1)	3
13 A	$l + b = 28$ and $l - b = 4$ (1); $2l = 32$ (1); length 16 cm, breadth 12 cm (1)	3
13 B	$3p + 2n = 110$, $2p + 3n = 115$ (1); adding, $p + n = 45$; subtracting, $p - n = -5$ (1); pen 20 rupees, notebook 25 rupees (1)	3
14	$p(0) = 4$ (1); $p(2) = 8 - 6 + 4 = 6$ (1); $p(-1) = 2 + 3 + 4 = 9$ (1)	3
15	Sides $15 \times 3/15 = 3$ cm, 5 cm, 7 cm (2); correct construction (2)	4
16	(i) Side of the hexagon = radius = 5 cm; perimeter = 30 cm (1) (ii) Circumference = $2\pi \times 5 = 10\pi \approx 31.4$ cm (2) (iii) $31.4 - 30 = 1.4$ cm (1)	4
17 A	(i) $\angle Q = 90° - \angle R = \angle SPR$ and both have a right angle at S, so the angles are the same (1) (ii) $PS/QS = SR/PS \rightarrow PS^2 = 4 \times 9 = 36 \rightarrow PS = 6$ cm (2) (iii) $PQ = \sqrt{(4^2 + 6^2)} = \sqrt{52} = 2\sqrt{13}$ cm (1)	4
17 B	(i) $\angle A$ is common; $\angle ADE = \angle ABC$ and $\angle AED = \angle ACB$ (corresponding angles) (1) (ii) $AD/AB = AE/AC \rightarrow 4/10 = 6/AC \rightarrow AC = 15$ cm, EC = 9 cm (2) (iii) $DE/BC = 4/10 \rightarrow DE = 6$ cm (1)	4
18	(i) $y = 0$ (1) (ii) $x = 2$: $y = 4 - 8 + 4 = 0$; $x = -1$: $y = 1 + 4 + 4 = 9$ (2) No. $x^2 - 4x + 4 = (x - 2)^2$, a square, which is never negative (1)	4
19	(i) 42 cm (1) (ii) $s = 21$ (1); area = $\sqrt{(21 \times 8 \times 7 \times 6)}$ (1) = $\sqrt{7056} = 84$ cm² (1)	4

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20 A	(i) $x - 3 = 5$ or $x - 3 = -5 \rightarrow x = 8$ or $x = -2$ (2) (ii) x is equidistant from −2 and 6, so $x = (-2 + 6) \div 2 = 2$ (2)	4
20 B	(i) $2 + 5 = 7$ and $2 - 5 = -3$ (2) (ii) Diameter $= 9 - (-5) = 14$ (1); centre $= (-5 + 9) \div 2 = 2$ (1)	4
21	Draw ABCD using triangles ABC and ACD (2); new sides 7.5, 6, 5.25, 6.75 cm and diagonal 9 cm (1); correct construction of the scaled quadrilateral (2)	5
22	(i) Right triangle with sides 1 cm and 2 cm; hypotenuse $= \sqrt{5}$ cm (1) (ii) $\sqrt{20} = 2\sqrt{5}$, so sum $= 3\sqrt{5}$ (1) (iii) $\sqrt{36} = 6$ (1) (iv) $3 + 2\sqrt{3} + 1 = 4 + 2\sqrt{3}$ (2)	5
23 A	(i) $2\pi r = 44 \rightarrow r = 7$ cm (1) (ii) $\pi r^2 = 22/7 \times 49 = 154$ cm² (2) (iii) Square side 11 cm, area 121 cm²; the circle has greater area, by 33 cm² (2)	5
23 B	(i) $2\pi r = 2 \times 22/7 \times 7 = 44$ cm (2) (ii) $44 \div 4 = 11$ cm (1) (iii) $¼ \times \pi r^2 = ¼ \times 154 = 38.5$ cm² (2)	5
24	(i) $1 - 2 + 1 + 1 = 1$ (1) (ii) $-1 - 2 - 1 + 1 = -3$ (1) (iii) $8 - 8 + 2 + 1 = 3$ (1) (iv) $x^3 - 2x^2 + x + 1 + x^2 - x = x^3 - x^2 + 1$ (2)	5
25 A	Let the number be $10x + y$; $x + y = 9$ (1); $(10y + x) - (10x + y) = 27 \rightarrow y - x = 3$ (2); $y = 6$, $x = 3$; number = 36 (2)	5
25 B	$f - 5 = 7(s - 5)$ and $f + 5 = 3(s + 5)$ (2); $f = 7s - 30$, so $7s - 25 = 3s + 15 \rightarrow s = 10$ (2); son 10 years, father 40 years (1)	5
26	(i) 2 : 3 (1) (ii) 4 : 9 (1) (iii) $20 \times 9/4 = 45$ cm² (1) (iv) $6^2 + 8^2 = 100 = 10^2$, so it is a right triangle; area $= ½ \times 6 \times 8 = 24$ cm²; new area $= 24 \times (1½)^2 = 54$ cm² (2)	5

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