

SUMMATIVE ASSESSMENT 2026-27

MATHEMATICS

	Class : IX		
1	B. $\sqrt{10}$ cm		
2	C. 9		
3	D. 6 cm		
4	D. 20		
5	B. (i) and (iii)		
6	A. 1		
7	C. Both are true. Statement 2 is the reason for statement 1.		
8	C. Both are true. Statement 2 is the reason for statement 1.		
9	Construction		
10	Let the numbers be X and Y $X + Y = 33$ $X - Y = 15$ Therefore $X = 24$, $Y = 9$ OR $X + X + 15 = 33$ $2X = 18$ $X = 9$ The numbers are 9 and 24		
11	(i) 5 Square units (ii) Sum of the perpendicular sides $= \sqrt{2} + \sqrt{3}$ $= 1.41 + 1.73$ $= 3.14$ Hypotenuse $= \sqrt{5}$ Square units $3.14 - 5$ $3.14 - 2.24 = 0.9$ OR (B) (i) $\sqrt{2}$ cm (ii) $2 + 1 + \sqrt{2} + \sqrt{5}$ $= 2 + 1 + 1.41 + 2.24$ $= 6.65 \text{ cm}$		

12	Price of 4 balls = 160 (1110 - 950) Price of 1 ball = 160/4 = 40 Rupees 3 Bat + 5 x 40 = 950 Price of 3 bats =950 - 200 = 750 Price of 1 bat = 750/3 = 250 Rupees										
13	Consecutive natural numbers - X, Y XY = 1540, X+Y = 79 (X+1) (Y+1) = XY+X+Y+1 = 1540 + 79 + 1 = 1620 OR (B) 4 Consecutive natural numbers X, X+1, X+2, X+3 X(X+3) = X ² + 3X (X+1) (X+2) = X ² + 3X + 2 (X ² + 3X + 2) - (X ² + 3X) = 2										
14	BD = 12 x $\frac{3}{4}$ = 9 cm PD = 12 x $\frac{1}{4}$ = 3 cm										
15	<table border="1"><tr><td>2</td><td>4</td></tr><tr><td>10</td><td>12</td></tr></table> 2 x 12 = 24 10 x 4 = 40 40 - 24 = 16 <table border="1"><tr><td>X</td><td>X+2</td></tr><tr><td>X+8</td><td>X+10</td></tr></table> X (X + 10) = X ² + 10X (X+8) (X+2) = X ² + 10X + 16 X ² + 10X + 16 - (X ² + 10X) = 16	2	4	10	12	X	X+2	X+8	X+10		
2	4										
10	12										
X	X+2										
X+8	X+10										
16	(i) 13 = 13 x 1 = $\left(\frac{14}{2}\right)^2 - \left(\frac{12}{2}\right)^2$ = 7 ² - 6 ² (ii) Construction										

17	(A) (i) $l + b = 18$ $3l + 5b = 68$ (ii) $2 \times (l + b) = 36$ $l + b = 18$(1) $2 \times (3l + 5b) = 136$ $3l + 5b = 68$(2) Solving eq (1) & (2) $l = 11, b = 7$ (B) $\frac{X+2}{Y} = \frac{1}{2}$ (1) $\frac{X}{Y-1} = \frac{1}{3}$ (2) from (1) $(X + 2) 2 = Y \times 1$ $Y = 2X + 4$ (1) from (2) $X \times 3 = 1 \times (Y - 1)$ $3X = Y - 1$ $3X = 2X + 4 - 1$ (from A) $3X = 2X + 3$ $X = 3$ $Y = 2X + 4$ $Y = 2 \times 3 + 4$ $= 10$ Fraction = $\frac{X}{Y} = \frac{3}{10}$		
18	(A) (i) $PQ = 16$ cm (ii) $= 16 + 12 + 10$ $= 38$ cm (iii) - When the sides are increased 4 times, the area becomes $4^2 = 16$ times the original area.		
19	(i) $44 - 16$ 28 cm (ii) $X + Y = 22$ $XY = 112$ $(X - 4)(Y - 4) = XY - 4(X + Y) + 16$ $= 112 - 4 \times 22 + 16$ $= 40$ Sq.cm		
20	Considering $\triangle ABC$ $\frac{AP}{PB} = \frac{AQ}{DC}$(1) Considering $\triangle ACD$ $\frac{AR}{RD} = \frac{AQ}{QC}$(2)		

	From (1) & (2) $\frac{AR}{RD} = \frac{AQ}{QC} = \frac{AR}{RD}$ $\frac{AP}{PB} = \frac{AR}{RD}$ OR B. $AP = \frac{1}{2} AC$ (P Midpoint) $QR = \frac{1}{2} AC$ $AP = QR$(1) $PQ = \frac{1}{2} AB$ $AR = \frac{1}{2} AB$ $PQ = AR$(2) $\angle A = 90^\circ$ PQ is parallel to AB QR parallel to AC $\angle P = \angle Q = \angle R = 90^\circ$ The opposite sides are equal and parallel and all the angles are 90°. Therefore, ARPQ is a square. (ii) $PQ = X$ OR Y ആയാൽ $\text{Area of } \triangle ABC = \frac{1}{2} \times 2X \times 2Y$ $= 2XY$ Area of rectangle = XY Therefore, the area of the rectangle is $\frac{1}{2}$ of the area of $\triangle ABC$		
21	Construction		
22	(i) $\sqrt{3}$ cm (ii) $= 2 + 1 + \sqrt{3}$ $= 3 + 1.73 = 4.73 \text{ cm}$ (iii) Perimeter of $\triangle ABC = 2 + 2 + 2 = 6 \text{ cm}$ Therefore, $6 - 4.73 = 1.27 \text{ cm}$ OR B. (i) $\sqrt{2}$ (ii) $\sqrt{2} + 1 + \sqrt{3}$ $= 1.41 + 1 + 1.73$ $= 4.14$ (iii) 10, $1\sqrt{11}$		

23	(i) Larger number = X, Smaller number = Y $(X+1)(Y-1) = 390$ $XY - X + Y - 1 = 390 \dots\dots\dots(1)$ $(X-1)(Y+1) = 408$ $XY + X - Y - 1 = 408 \dots\dots\dots(2)$ $(1) + (2) \Rightarrow 2XY - 2 = 798$ $2XY = 800$ $XY = 400$ (ii) In eq (2) $400 + X - Y - 1 = 408$ $399 + X - Y = 408$ $X - Y = 408 - 399$ $= 9$		
24	(A) PQRB is a parallelogram. PQ is parallel to BC $PQ = \frac{1}{2} BC \dots\dots\dots(1)$ $BR = \frac{1}{2} BC \dots\dots\dots(2)$ From (1) & (2) $PQ = BR$ Since one pair of opposite sides are equal and parallel, PQRB is a parallelogram. The diagonals of a parallelogram bisect each other. $PS = SR$ That is, BQ bisects PR. B. (i) $6 : 4 = 3 : 2$ (ii) $BP = 15 \times \frac{3}{5} = 9 \text{ cm}$ $PC = 15 \times \frac{2}{5} = 6 \text{ cm}$ (iii) $3 : 2$		
25	Price of a bag = X Price of an umbrella = Y $7X + 3Y = 3690 \dots\dots\dots(1)$ $3X + 7Y = 3010 \dots\dots\dots(2)$ $(1) + (2) 10X + 10Y = 6700$ $X + Y = 670$		

	$(1) - (2) \Rightarrow 4X - 4Y = 680$ $X - Y = 170$ $X + Y = 670 +$ $\underline{X - Y = 170}$ $2X + 0 = 840$ $X = 420$ $Y = 670 - 420$ $= 250$		
26	A. Let the numbers be X, Y $(X+2)(Y+2) = 1053$ $XY + 2(X+Y) + 4 = 1053$ $(X-2)(Y-2) = 805$ $XY - 2(X+Y) + 4 = 805$ $XY + 2(X+Y) + 4 = 1053 +$ $\underline{XY - 2(X+Y) + 4 = 805}$ $2XY + 0 + 8 = 1858$ $2XY = 1850$ $XY = 1850/2 = 925$ $XY + 2(X+Y) + 4 = 1053$ $925 + 2(X+Y) + 4 = 1053$ $925 + 2(X+Y) = 1053$ $2(X+Y) = 1053 - 929$ $2(X+Y) = 124$ $X + Y = 62$ OR B.  X Y (i) $(X-1)(Y+1) = XY + 16$ $XY + X - Y - 1 = XY + 16$ $X - Y = 17$ $(X+1)(Y-1) = XY - X + Y - 1$ $= XY - (X-Y) - 1$ $= XY - 17 - 1$ $= XY - 18$ Therefore, the area decreases by 18 square meters. PREPARED BY : SEEMA SUGATHAN, HST (Maths)		