2026 WA1 Paper

River Valley High School

Secondary 2 G3 Mathematics

READ THESE INSTRUCTIONS FIRST

Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place in the case of angles in degrees, unless a different level of accuracy is specified in the question.

Omission of essential working will result in the loss of marks.

Duration: 35 min

Total	**/25**

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1. Expand and simplify $\frac{1}{2}[9x + 5(x - 2y)]$

Ans: _____ [2]

2. Factorise completely $4ab - 8xb + 6x - 3a$.

Ans: _____ [2]

3. Express $\frac{2x+5}{3} - \frac{x+1}{2} + 1$ as a single fraction in its simplest form.

Ans: _____ [3]

4. Solve the equation $\frac{3x+2}{5} + \frac{1-x}{2} = 1$.

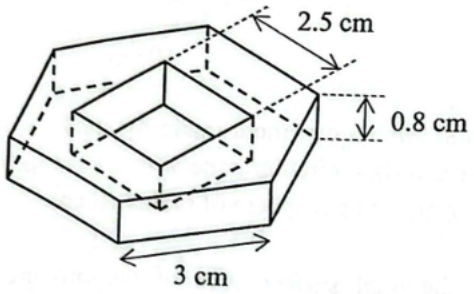
Ans: _____ [3]

Answer the whole of Question 5 on the space below.

5. (i) Construct a triangle ABC such that $AB = 11cm$, $BC = 9.5cm$ and $AC = 10cm$. [1]
   (ii) Construct the perpendicular bisector of AC. [1]
   (iii) Construct the angle bisector of BAC. [1]
   (iv) The perpendicular bisector of AB and the angle bisector of BAC intersect at the point X. Measure and write down the size of AXB. [1]

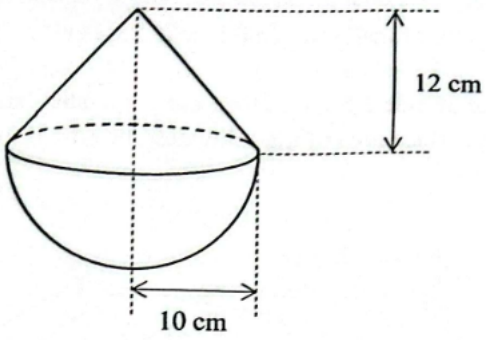
Ans: (iv)_____

6. A solid rectangular prism has a height of 0.8 cm. Each side of the hexagon measures 3 cm and the area of one hexagonal face is $23.4cm^2$.
   A square hole of side 2.5 cm is then cut perpendicularly through the centre of the solid. Find the total surface area of the soild after the hole is made, shown in the diagram below.



Ans: _____ [4]

7. The diagram shows an ornament made by stacking two solids, one on top of the other. The top layer is a right circular cone with a base radius of 10 cm and a height of 12 cm. The bottom layer is a hemisphere of radius 10 cm.



(a) Find the total surface area of the ornament, giving your answer correct to the nearest cm^2.

Ans: _____ [4]

(b) The designer of the ornament requires the volume of the bottom layer to be greater than that of the top layer for it to be stable. By showing your workings clearly, explain whether the comment meets the stability requirement.

Ans: _____ [3]

Solutions

1. $\boxed{7x - 5y}$
2. $\boxed{(2b - 3)(2a - 2x)}$
3. $\boxed{\frac{7x+25}{6}}$
4. $\boxed{x = \frac{2}{11}}$

6. $\boxed{56.7 \text{ cm}^2}$

7(a). $\boxed{1119 \text{ cm}^2}$

7(b). $\boxed{\text{Yes, the ornament meets the stability requirement.}}$