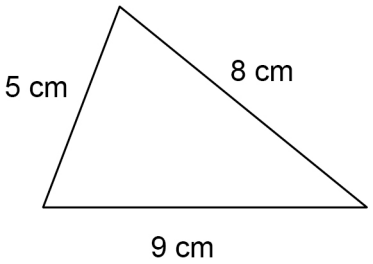
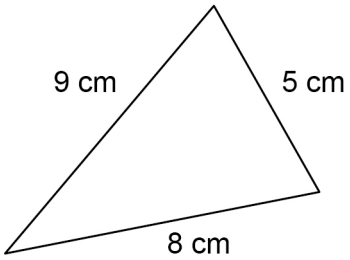
1





Not drawn accurately

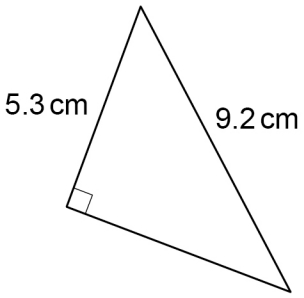
Circle the reason why these triangles are congruent.

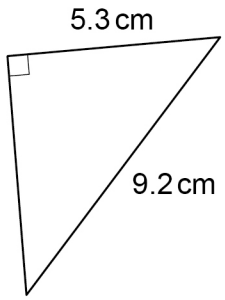
[1 mark]

ASA RHS SAS SSS

1

2





Not drawn accurately

Circle the reason why the triangles are congruent.

[1 mark]

ASA RHS SAS SSS

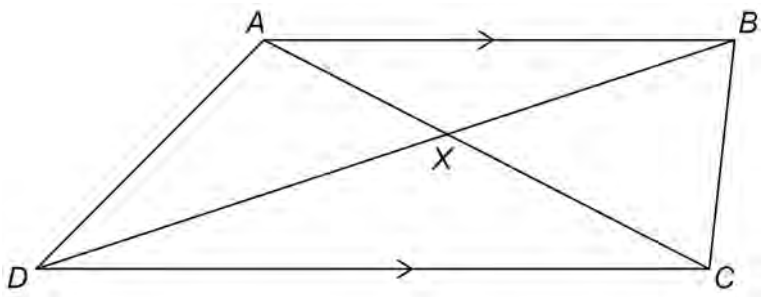
1

3 *ABCD* is a trapezium.

All four sides are different lengths.

AB is parallel to *CD*.

The diagonals intersect at *X*.



Not drawn accurately

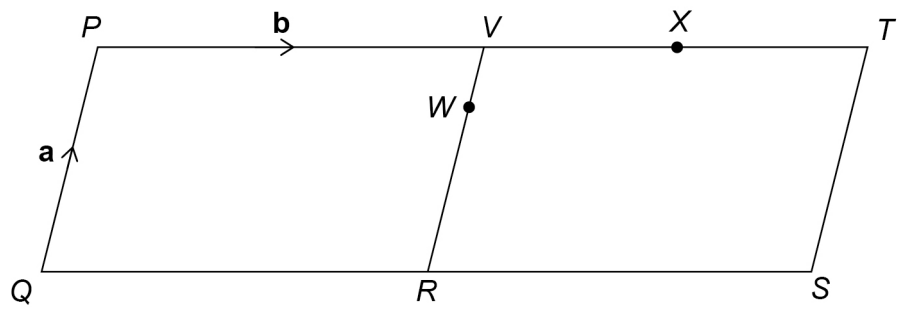
For each statement, tick the correct box.

[4 marks]

	True	May be true	Not true
Triangles *AXB* and *CXD* are similar	✓ (1)		
Triangles *AXD* and *BXC* are congruent			✓ (1)
Angle *ADB* = angle *BDC*			✓ (1)
Area of triangle *ABC* = area of triangle *ABD*	✓ (1)		

4 Two congruent parallelograms, *PQRV* and *VRST*, are joined.

Not drawn accurately



$\overrightarrow{QP} = \mathbf{a}$ $\overrightarrow{PV} = \mathbf{b}$

X is the midpoint of *VT*.

VW : *WR* = 1 : 2

Prove that *Q*, *W* and *X* lie on a straight line.

[3 marks]

$\overrightarrow{QW} = \overrightarrow{QP} + \overrightarrow{PV} + \overrightarrow{VW}$

$= \underline{a} + \underline{b} + \frac{1}{3}(\overrightarrow{VR})$

$= \underline{a} + \underline{b} - \frac{1}{3}\underline{a}$

$= \frac{2}{3}\underline{a} + \underline{b}$ (1)

$\overrightarrow{QX} = \overrightarrow{QP} + \overrightarrow{PV} + \overrightarrow{VX}$

$= \underline{a} + \underline{b} + \frac{1}{2}(\overrightarrow{VT})$

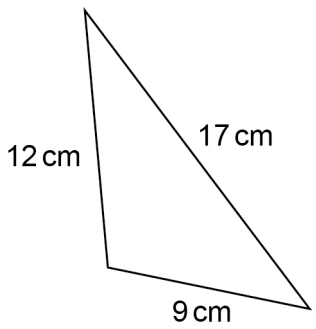
$= \underline{a} + \underline{b} + \frac{1}{2}\underline{b}$

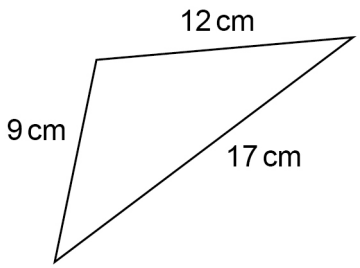
$= \underline{a} + \frac{3}{2}\underline{b}$ (1)

$\overrightarrow{QW} = \frac{3}{2}(\frac{2}{3}\underline{a} + \underline{b}) = \underline{a} + \frac{3}{2}\underline{b} = \overrightarrow{QX}$

$\overrightarrow{QW} = \frac{3}{2}\overrightarrow{QX}$ (1)

5





Not drawn accurately

Circle the reason why these triangles are congruent.

[1 mark]

ASA RHS SAS SSS

1