

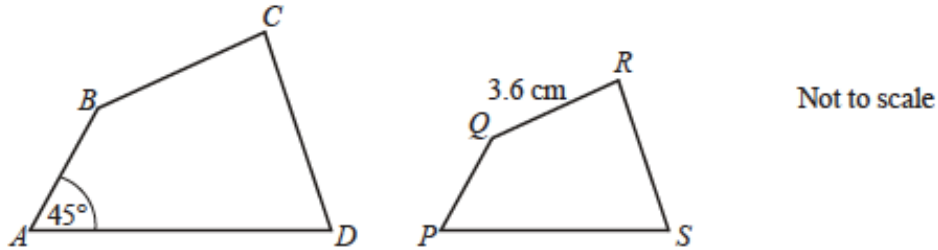
Topic 13 Similar shapes (Pre-TT) [29]

1.

$PQRS$ is an enlargement of $ABCD$ with scale factor $\frac{2}{3}$

$QR = 3.6\text{ cm}$

Angle $BAD = 45^\circ$



(a) Calculate the length of BC .

(2)

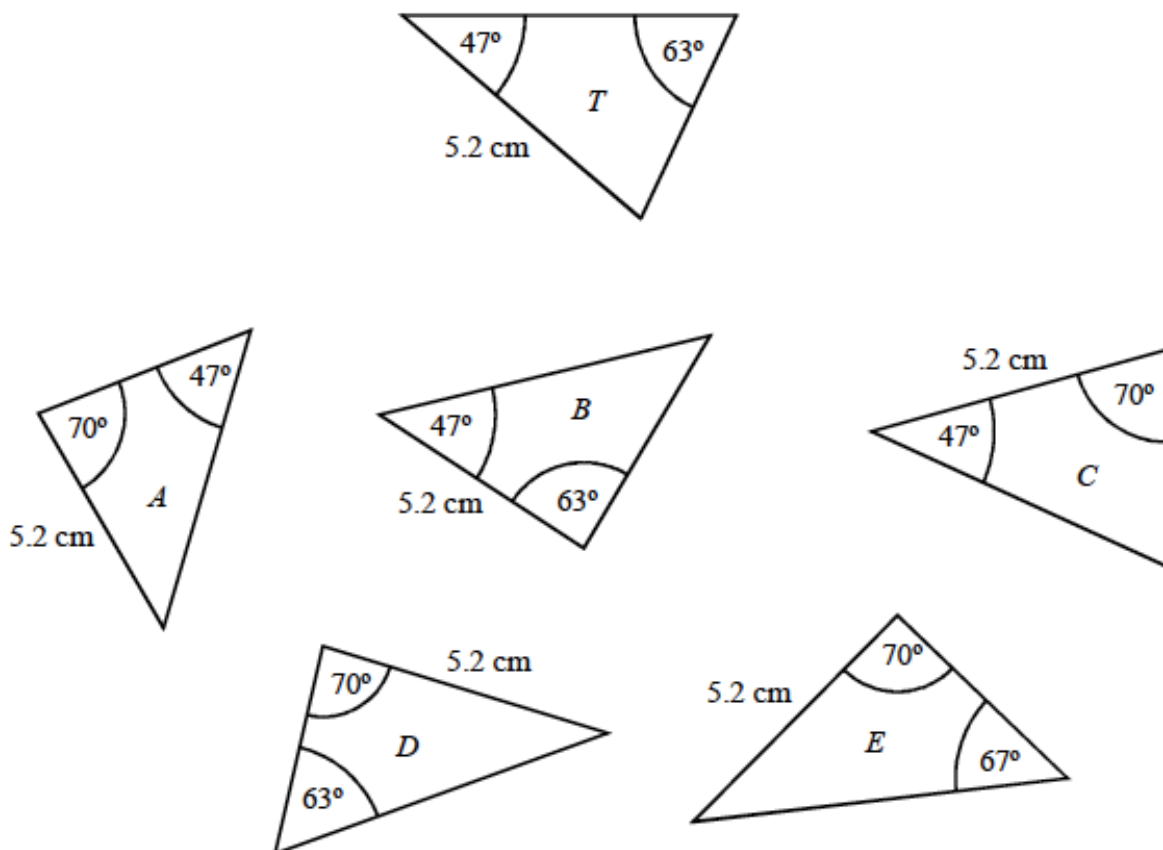
(b) Find the size of angle QPS .

(1)

(Total 3 marks)

2.

Triangle T and triangles A , B , C , D and E are not drawn accurately.



Which two of triangles A , B , C , D and E are congruent to triangle T ?

(Total 2 marks)

3. **Non-calculator**

Solid **A** and solid **B** are mathematically similar.

The ratio of the surface area of solid **A** to the surface area of solid **B** is 4:9

The volume of solid **B** is 405 cm^3 .

Show that the volume of solid **A** is 120 cm^3 .

(Total 3 marks)

4.

Which of these is **not** used to prove that triangles are congruent?

Circle your answer.

[1 mark]

SSS

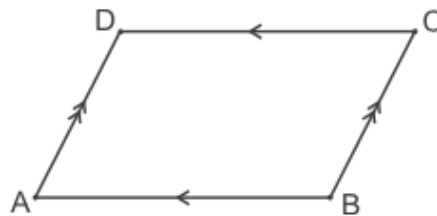
SAS

AAA

RHS

5.

ABCD is a parallelogram.

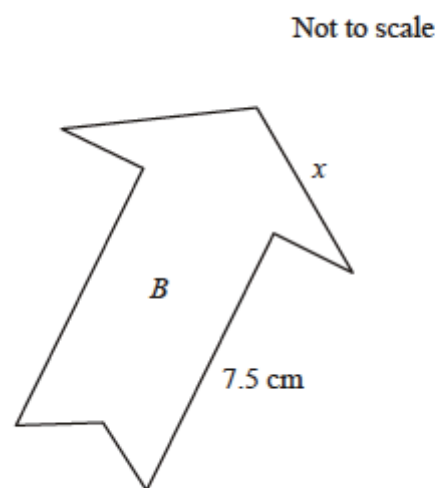
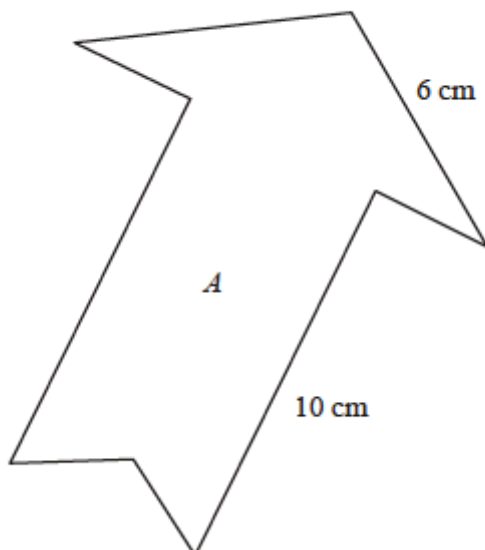


Prove that triangle ABD is congruent to triangle CDB.

[3]

6.

The diagrams show two similar shapes *A* and *B*.



(a) Work out the value of x .

(3)

(b) The perimeter of shape *B* is 30 cm.

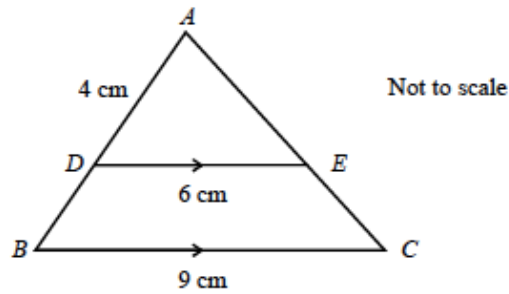
Work out the perimeter of shape *A*.

(2)

(Total 5 marks)

7.

Triangles ADE and ABC are similar.
 DE is parallel to BC .
 $AD = 4$ cm, $DE = 6$ cm and $BC = 9$ cm.

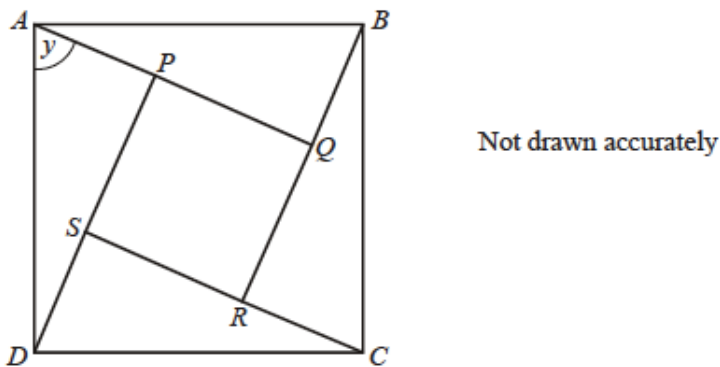


Calculate the length of BD .

(Total 3 marks)

8.

$ABCD$ and $PQRS$ are squares.
Angle $DAP = y$

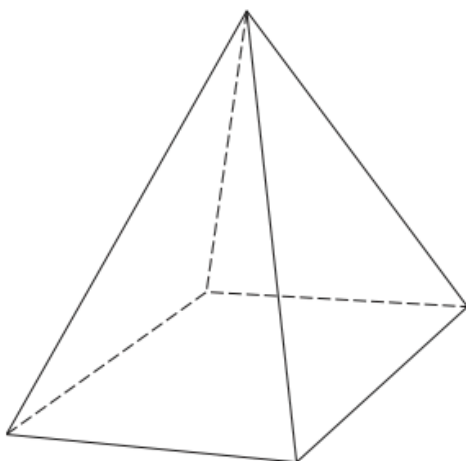


Prove that triangles ABQ and DAP are congruent.

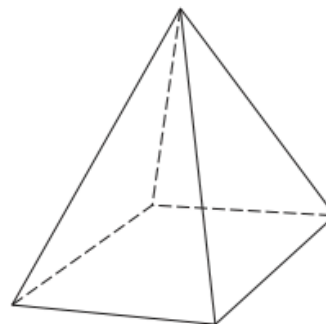
(Total 4 marks)

9.

Two similar pyramids A and B have surface areas 180 cm² and 80 cm² respectively.



Pyramid A



Pyramid B

The volume of pyramid A is 810 cm³.

Show that the volume of pyramid B is 240 cm³.

[5]