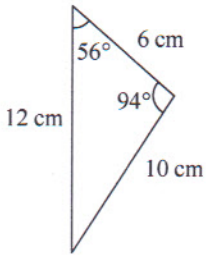
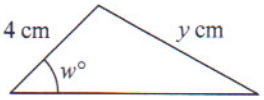
May 07 4H

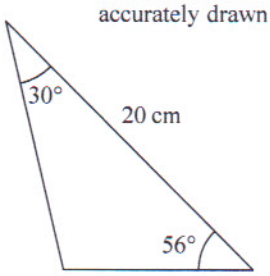
Leave blank

**11.** Here are three similar triangles.

Diagrams **NOT** accurately drawn




Find the value of

(a) $w$,

$w =$ .....

**(1)**

(b) $x$,

$x =$ .....

**(2)**

(c) $y$.

$y =$ .....

**(2)**

**Q11**

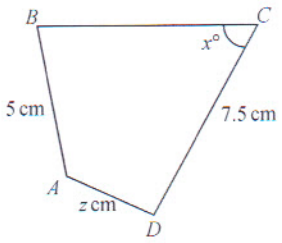
**(Total 5 marks)**

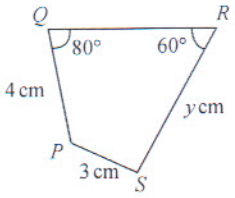
Leave blank

May 09 4H

**13.** *ABCD* and *PQRS* are two similar quadrilaterals.

Diagrams **NOT** accurately drawn




*AB* corresponds to *PQ*.
*BC* corresponds to *QR*.
*CD* corresponds to *RS*.

Find the value of

(a) $x$,

$x =$ .....
**(1)**

(b) $y$,

$y =$ .....
**(2)**

(c) $z$.

$z =$ .....
**(2)** **Q13**

**(Total 5 marks)**

Leave blank

May 06 3H

**12.**

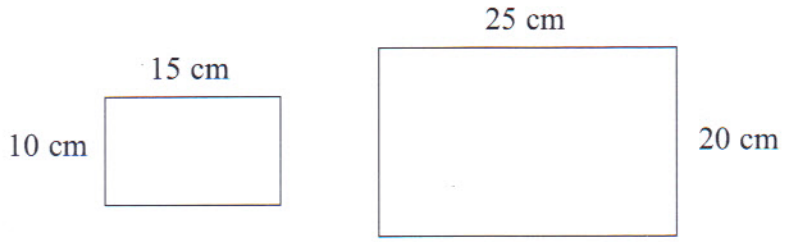



Diagram **NOT** accurately drawn

Are the two rectangles mathematically similar?
Tick (✓) the appropriate box.
You must show working to justify your answer.

| Yes | No |
|---|---|
| ☐ | ☐ |

**Q12**

**(Total 3 marks)**

May 04 4H

**12.**

*Leave blank*

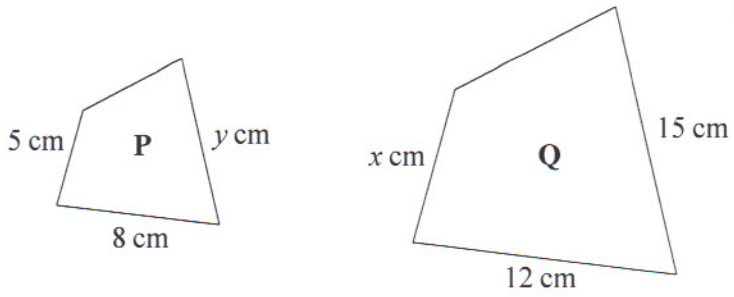



Diagram **NOT** accurately drawn

Quadrilateral **P** is mathematically similar to quadrilateral **Q**.

(a) Calculate the value of $x$.

$x =$ .....

**(2)**

(b) Calculate the value of $y$.

$y =$ .....

**(2)**

The area of quadrilateral **P** is 60 $cm^2$.

(c) Calculate the area of quadrilateral **Q**.

..... $cm^2$

**(2)**

**Q12**

**(Total 6 marks)**

**12.**

Nov 08 3H

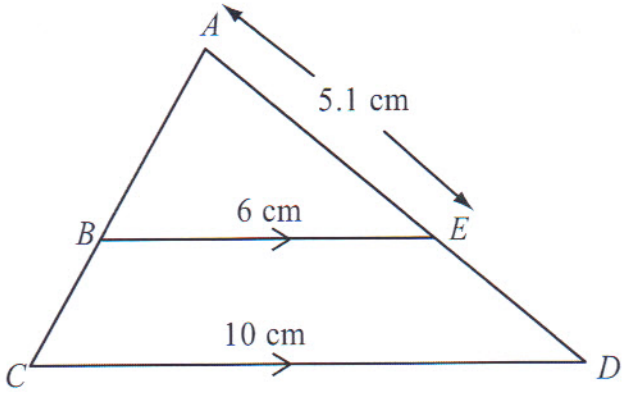



Diagram **NOT** accurately drawn

*ABC* and *AED* are two straight lines.
*BE* is parallel to *CD*.
*AE* = 5.1 cm, *BE* = 6 cm, *CD* = 10 cm.

(a) Calculate the length of *DE*.

..... cm
**(3)**

(b) Calculate the value of $\frac{\text{Area of triangle } ABE}{\text{Area of trapezium } BCDE}$

.....
**(3)**

**Q12**

**(Total 6 marks)**

Leave blank

**20.** (a) The ratio of the areas of two similar triangles is $1:k$.
Write down, in terms of $k$, the ratio of the lengths of their corresponding sides.

.....

**(1)**

(b)

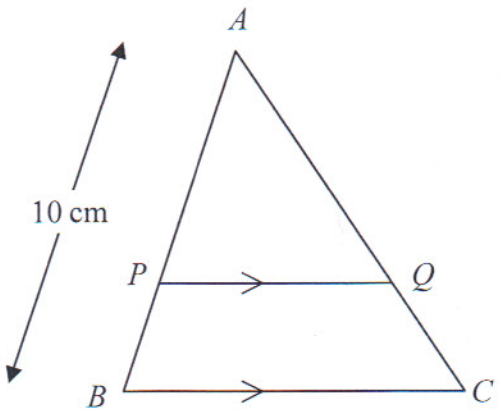



Diagram **NOT** accurately drawn

$AB = 10$ cm.
$PQ$ is parallel to $BC$.

The area of triangle $APQ$ is half the area of triangle $ABC$.

Calculate the length of $AP$.
Give your answer correct to 2 significant figures.

..... cm

**(2)**

**Q20**

**(Total 3 marks)**

Leave blank

**14.** Oil is stored in either small drums or large drums.
The shapes of the drums are mathematically similar.

Nov 04 3H

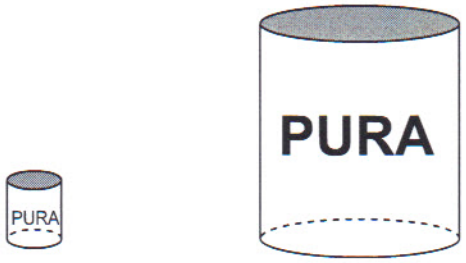



Diagram **NOT** accurately drawn

A **small** drum has a volume of 0.006 $m^3$ and a surface area of 0.2 $m^2$.

The height of a **large** drum is 3 times the height of a small drum.

(a) Calculate the volume of a large drum.

..... $m^3$
**(2)**

(b) The cost of making a drum is \$1.20 for each $m^2$ of surface area.
A company wants to store 3240 $m^3$ of oil in large drums.
Calculate the cost of making enough large drums to store this oil.

\$ .....
**(4)**

**Q14**

**(Total 6 marks)**