13.

Quadrilateral P is mathematically similar to quadrilateral Q.

(a) Calculate the value of $x$.

(b) Calculate the value of $y$. 

Diagram NOT accurately drawn
13. \(ABCD\) and \(PQRS\) are two similar quadrilaterals.

\[\text{Diagrams NOT accurately drawn}\]

\[\begin{align*}
AB \ & \text{corresponds to } PQ, \\
BC \ & \text{corresponds to } QR, \\
CD \ & \text{corresponds to } RS.
\end{align*}\]

Find the value of

(a) \(x\),

(b) \(y\),

(c) \(z\).
12. Here are two similar triangles.  
$AB$ corresponds to $PQ$.  
$BC$ corresponds to $QR$. 

\[ \text{Diagrams NOT accurately drawn} \]

Find the value of

(a) $x$

(b) $y$
11. Here are three similar triangles.

Find the value of

(a) $w$,

(b) $x$,

(c) $y$. 
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.

(b) 

\[ AB = 10 \text{ cm.} \]
\[ PQ \text{ is parallel to } BC. \]

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

Nov 2010 3H Paper

10. Here are two similar triangles.

Diagrams NOT accurately drawn
Similar Shapes IGCSE Higher Tier Exam Questions

\(LM\) corresponds to \(PQ\).
\(MN\) corresponds to \(QR\).

(a) Find the value of \(x\).

(b) Find the value of \(y\).

May 2005 4H Paper

12. Triangles \(ABC\) and \(DEF\) are similar.

\[\begin{align*}
A & \quad 2.5 \text{ cm} \\
B & \quad 2 \text{ cm} \\
C & \quad 1.5 \text{ cm} \\
D & \quad 3 \text{ cm} \\
E & \quad 49^\circ \\
F & \\
\end{align*}\]

\(AC = 2.5 \text{ cm}\) \hspace{1cm} \(BC = 2 \text{ cm}\) \hspace{1cm} \(DE = 1.5 \text{ cm}\) \hspace{1cm} \(EF = 3 \text{ cm}\) \hspace{1cm} \text{Angle } EDF = 49^\circ

(a) Find the size of angle \(BAC\).

(b) Work out the length of

(i) \(DF\),

(ii) \(AB\).
13.

\[ BE \text{ is parallel to } CD. \]
\[ AB = 4.5 \text{ cm}, \ AE = 5 \text{ cm}, \ ED = 3 \text{ cm}, \ CD = 5.6 \text{ cm}. \]

(a) Calculate the length of \( BE \).

(b) Calculate the length of \( BC \).
Quadrilateral $P$ is mathematically similar to quadrilateral $Q$.

(a) Calculate the value of $x$.

(b) Calculate the value of $y$.

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

(c) Calculate the area of quadrilateral $Q$. 
14. L and M are two mathematically similar prisms.

Prism L has length 8 cm.
Prism M has length 20 cm.
Prism L has height 3 cm.

(a) Work out the height of prism M.

Prism M has a volume of 1875 cm³

(b) Work out the volume of prism L.
Similar Shapes IGCSE Higher Tier Exam Questions

June 2010 3H Paper

17.

Diagram NOT accurately drawn

Two prisms, P and Q, are similar.
The cross-section of prism P is a triangle with a base of length 12 cm.
The cross-section of prism Q is a triangle with a base of length 18 cm.
The total surface area of prism P is 544 cm².

Calculate the total surface area of prism Q.

May 2005 3H Paper

21.

Diagram NOT accurately drawn

Two cuboids, S and T, are mathematically similar.
The total surface area of cuboid S is 157 cm² and the total surface area of cuboid T is 2512 cm².
(a) The length of cuboid $T$ is 26 cm. Calculate the length of cuboid $S$.

(b) The volume of cuboid $S$ is 130 cm$^3$. Calculate the volume of cuboid $T$.

June 2010 4H Paper

10. Quadrilaterals $ABCD$ and $PQRS$ are similar.

$AB$ corresponds to $PQ$.
$BC$ corresponds to $QR$.

Find the value of

(a) $x$

(b) $y$
14 Here are two supermarket price tickets.

The two supermarket price tickets are mathematically similar.

The area of the smaller ticket is 7 cm$^2$. Calculate the area of the larger ticket.
12 $ABCD$ and $APQR$ are two similar quadrilaterals.

$PQ = 9$ cm.
$BC = 6$ cm.
$AD = 5$ cm.
$QR = 12$ cm.

(a) Find the length of $DC$.

(b) Find the length of $AR$.

The area of the quadrilateral $ABCD$ is 32 cm$^2$.

(c) Calculate the area of the shaded region.