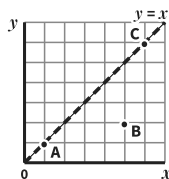


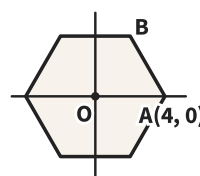
1 Lines of symmetry

- a) The line $y = x$ is a line of symmetry of the kite ABCD. Find the coordinates of D.
- b) An isosceles triangle has a base from $(-1, 3)$ to $(5, -1)$. Find its line of symmetry.



2 Rotational symmetry

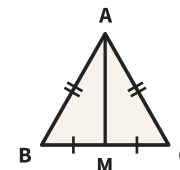
- a) Each interior angle of a regular polygon is 7 times each exterior angle. Find its order of rotational symmetry.
- b) The regular hexagon has centre O. Find the exact coordinates of B.



3 Congruent triangles

AB = AC and M is the midpoint of BC.

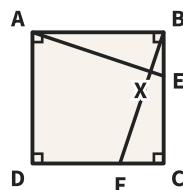
- a) Prove that triangles ABM and ACM are congruent.
- b) Hence prove that AM is perpendicular to BC.



4 Congruent triangles

ABCD is a square with BE = CF.

- a) Prove that triangles ABE and BCF are congruent.
- b) Hence prove that AE is perpendicular to BF.



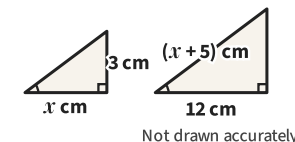
Congruence, symmetry and similarity

revision mat

5 Similar shapes: missing lengths

The two triangles are similar.

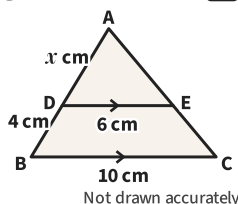
- a) Find x .
- b) The large triangle's longest side is 15 cm. Find the small triangle's perimeter.



6 Similar shapes: missing lengths

DE is parallel to BC.

- a) Find x .
- b) Find the ratio of the area of triangle ADE to the area of DBCE.



7 Area and volume scale factors

- a) Two similar shapes have areas in the ratio 16 : 25. The small one has a perimeter of 28 cm. Find the large one's perimeter.
- b) Two similar solids have surface areas of 48 cm^2 and 108 cm^2 . The larger has a volume of 540 cm^3 . Find the smaller's volume.

8 Area and volume scale factors

- a) A cone 12 cm tall is cut 4 cm from its top, parallel to the base. The bottom part has a volume of 520 cm^3 . Find the cone's volume.
- b) Each length of a solid goes up by 10%. Show that the volume goes up by 33.1%.

