

Check out

You should now be able to ...

✓ Classify 3D shapes and draw 2D representations.	6	1
✓ Calculate the surface area and volume of a prism.	8	2
✓ Use Pythagoras' theorem in three dimensions.	8	3
✓ Use sine, cosine and tangent to find lengths and angles in right-angled triangles.	8	4 - 7
✓ Use trigonometry in calculations with bearings.	8	8

Test it

Questions

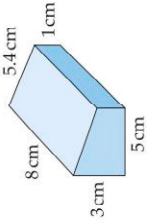


Language Meaning

Example

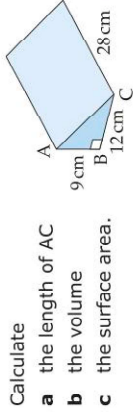
Plane of symmetry	A plane that cuts a solid into two identical halves.	
Opposite side	The side in a right-angled triangle directly opposite the angle being considered.	
Adjacent side	The side in a right-angled triangle next to the angle being considered.	
Sine (sin)	The ratio $\frac{\text{opposite}}{\text{hypotenuse}}$	$\sin 30^\circ = 0.5$
Cosine (cos)	The ratio $\frac{\text{adjacent}}{\text{hypotenuse}}$	$\cos 30^\circ = 0.866$
Tangent (tan)	The ratio $\frac{\text{opposite}}{\text{adjacent}}$	$\tan 30^\circ = 0.577$

1



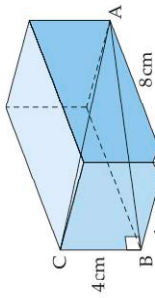
- a How many faces, edges and vertices does the prism have?
- b Draw a net of the prism.
- c Draw the plan view of the prism.

2



- a the length of AC
- b the volume
- c the surface area.

3



- a the length AB
 - b the length AC
- Write your answers in simplified surd form.

Calculate

- 4 Calculate $\sin \theta$, $\cos \theta$ and $\tan \theta$ to 3 sf for this triangle.
-

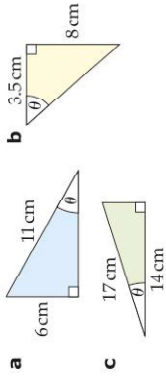
What next?

Score	0 - 3	Your knowledge of this topic is still developing. To improve look at Formative test: 3C-14; MyMaths: 1086, 1098, 1107, 1111, 1131, 1133, 1138 and 1139
	4 - 6	You are gaining a secure knowledge of this topic. To improve look at InvisiPen: 325, 327, 328, 374, 382, 383 and 384
	7 - 8	You have mastered this topic. Well done, you are ready to progress!

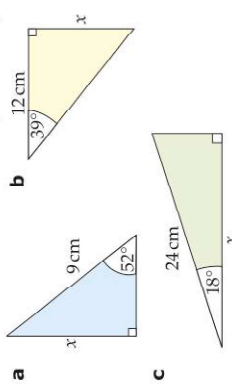
5 Find the angle θ , to 1 dp if

- a $\sin \theta = 0.6$
- b $\cos \theta = 0.2$
- c $\tan \theta = 1.4$

6 Calculate the angle θ to 1 dp in each triangle.



7 Calculate each unknown length x to 1 dp.



8 A ship is due west of a lighthouse. It sails on a bearing of 120° for 25 km at which point it is due south of the lighthouse.

- a How far is the ship from the lighthouse now?
- b On what bearing would the ship have to travel to return directly to its start point?

