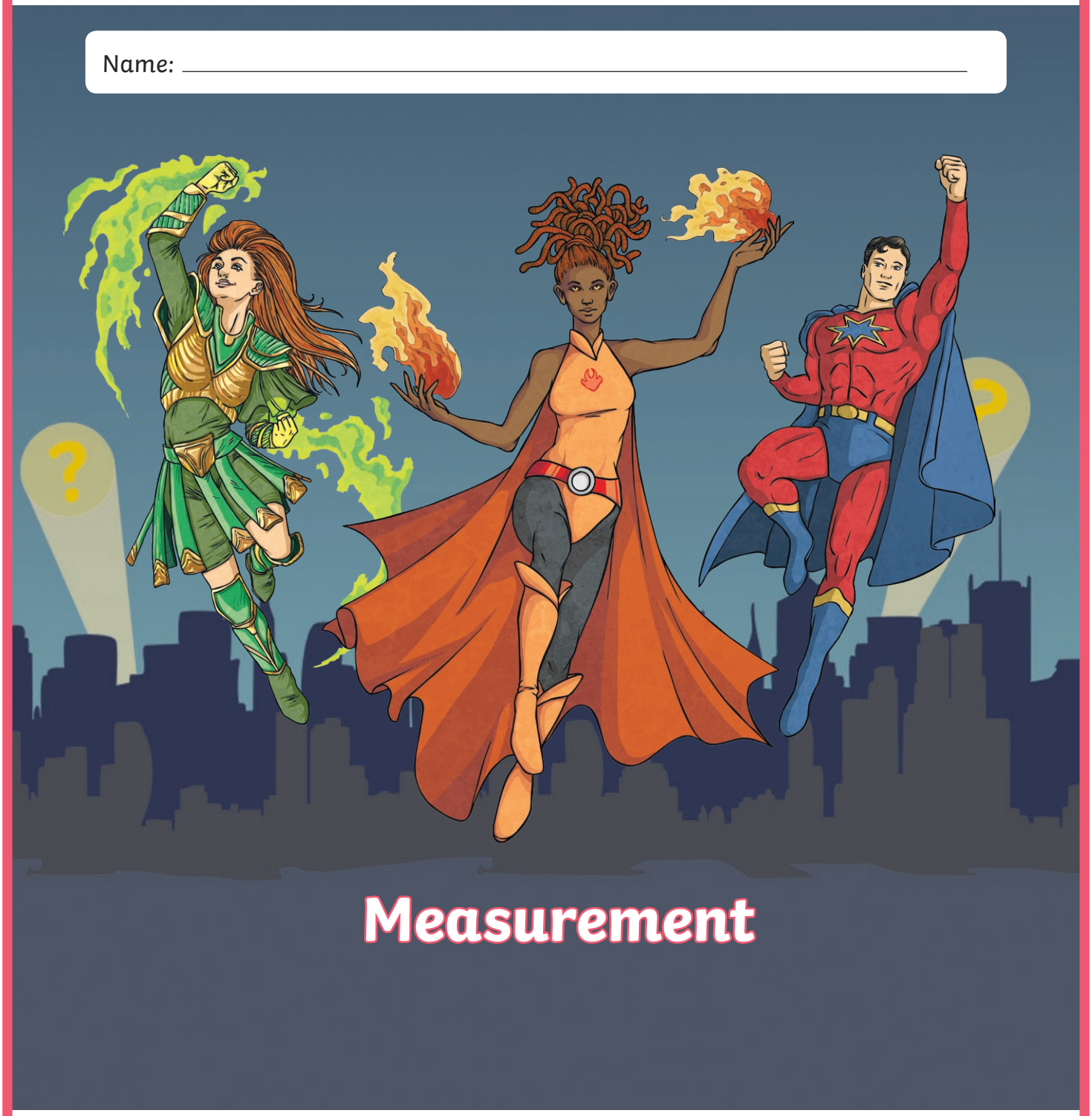
Year 6 SATs

Maths Revision & Practice Booklet

Name: _____



Measurement

Revise

Use, Read, Write and Convert Between Standard Units of Measure

Measurement systems arranged with units in powers of ten are called metric systems. Metric systems can be converted by multiplying and dividing by 10, 100 or 1,000.

Capacity Measures quantities of liquid	Millilitre = ml Centilitre = cl Litre = l	10ml = 1cl 100ml = 10cl 1,000ml = 100cl = 1l	1ml = 0.001l 10ml = 0.01l 100ml = 0.1l	l to cl cl to l l to ml ml to l	× 100 ÷ 100 × 1,000 ÷ 1,000
Length Measures distances and areas	Millimetre = mm Centimetre = cm Metre = m Kilometre = km	10mm = 1cm 100mm = 10cm 1,000mm = 100cm = 1m 1,000m = 1km	1mm = 0.1cm 1cm = 0.01m 10cm = 0.1m 1m = 0.001km 10m = 0.01km 100m = 0.1km	cm to mm mm to cm m to cm cm to m km to m m to km	× 10 ÷ 10 × 100 ÷ 100 × 1,000 ÷ 1,000
Mass Measures weight	Grams = g Kilograms = kg	1,000g = 1kg	1g = 0.001kg 10g = 0.01kg 100g = 0.1kg	kg to g g to kg	× 1,000 ÷ 1,000

Read, Write and Convert Time

The Earth takes 365 $\frac{1}{4}$ days to orbit the Sun so every fourth year has 366 days, which is known as a leap year.

The months of the year also have a varying amount of days.

Units of Time	Second	1 minute = 60 seconds
	Minute	1 hour = 60 minutes
	Hour	1 day = 24 hours
	Day	1 week = 7 days
	Week	1 year = 365 days
	Month	1 year = 12 months
	Year	1 decade = 10 years
	Decade	1 century = 100 years
	Century	1 millennium = 1,000 years
	Millennium	

Analogue clocks show 12-hour time.
Time before midday is shown using a.m.
Time after midday is shown using p.m.

Digital clocks show either 12-hour or 24-hour time.
For 24-hour time, use four digits.
To convert 12-hour p.m. time to 24-hour time, add 12 hours.

Revise

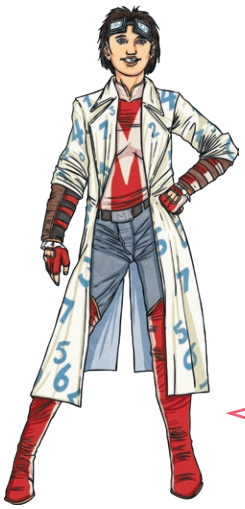
Understand and Use Approximate Equivalences Between Metric Units and Common Imperial Units

Imperial measures are different to metric measurements as they do not use a base ten system. Therefore, conversions between metric and imperial measurements are only approximate.

Capacity Measures quantities of liquid	Pints (pt) Gallons (gal)	8 pints = 1 gallon	1 pint = approximately 570ml 1 litre = approximately 1.8 pints
Length Measures distances and areas	Inches (in) Feet (ft) Yard (yd) Miles (mi)	12 inches = 1 foot 3 feet = 1 yard 1,760 yards = 1 mile	1 inch = approximately 2.5cm 1 foot = approximately 30cm 1 mile = approximately 1.6km 1 kilometre = approximately 0.6 miles
Mass Measures weight	Ounces (oz) Pounds (lb) Stones (st)	16 ounces = 1 pound 14 pounds = 1 stone	1 ounce = approximately 28g 100g = approximately 3.5 ounces 1 pound = approximately 450g 1kg = approximately 2.2 pounds 1 stone = approximately 6.4kg

Calculate the Perimeter of Composite Rectilinear Shapes

The perimeter is the total distance around the edge of a 2D shape.

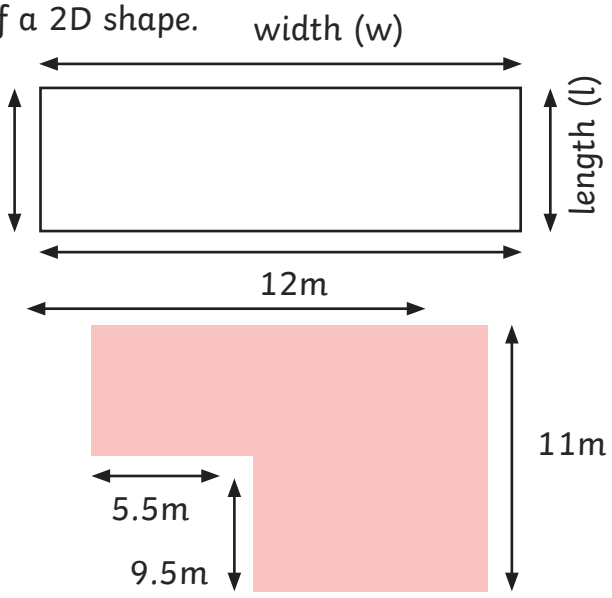


The perimeter of a rectangle can be calculated using a formula involving length and width:

$2l + 2w = p$

or

$2(l + w) = p$



12m + 11m + 6.5m + 9.5m + 5.5m + 1.5m = **46m**

A rectilinear shape is a polygon where all the angles are right angles. To find the perimeter of a rectilinear shape, add up the outside edges of the shape. You may have to use reasoning to find missing lengths.

Revise

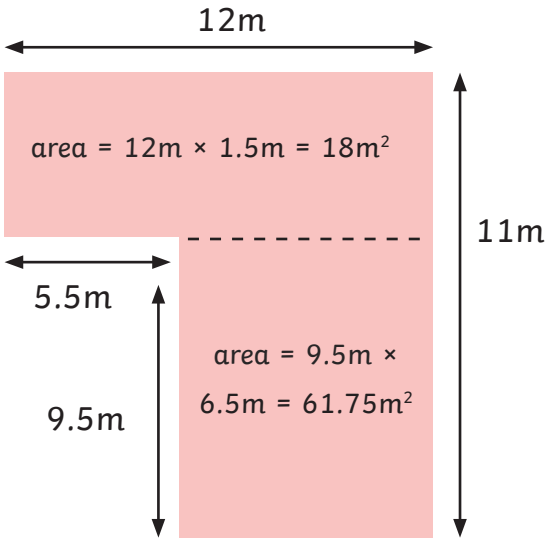
Calculate the Area of Rectangles, Triangles and Parallelograms

Area is measured in 'square' units. It measures the surface area of a 2D shape.

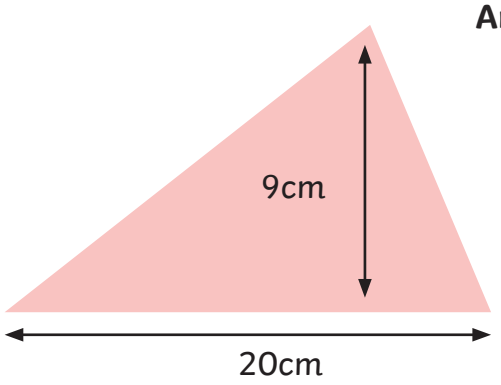
The area of a rectangle can be calculated using a formula involving the length and width.

Area = Length × Width

To find the area of a rectilinear shape, it is easier to split it into differently sized rectangles. You may have to use reasoning to find missing lengths.



Area of rectilinear shape = 18m² + 61.75m² = 79.75m²



The area of a triangle can be calculated using a formula involving the base and height measurements.

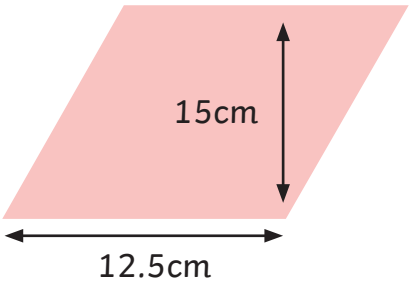
Area = (Base × Height) ÷ 2

Area of triangle = (20cm × 9cm) ÷ 2 = 90cm²

The area of a parallelogram can be calculated using a formula involving the base and height measurements.

Area = Base × Height

Area of parallelogram = 12.5cm × 15cm = 187.5cm²



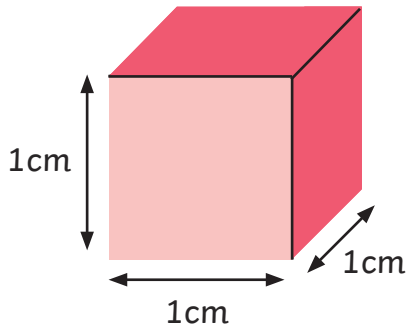
If you visualise a parallelogram as a rectangle and two right-angled triangles, you can see how the area of a parallelogram relates to the area of a rectangle.

Revise

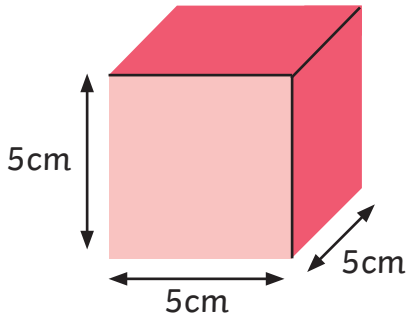
Calculate, Estimate and Compare the Volume of Cubes and Cuboids Using Standard Units

Volume is measured in 'cubed' units. It is the measure of how much space a 3D object occupies.

A cubic centimetre is a cube that has the length, width and height of 1cm.



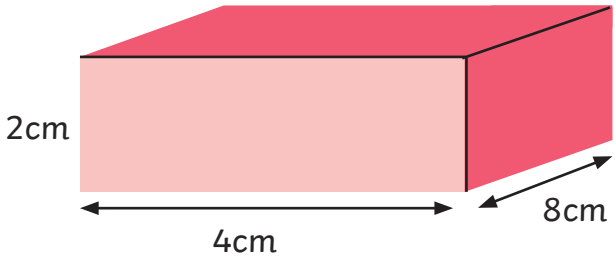
The volume of any **cube** can be found using the formula **length of side^3**.



Volume = 5cm × 5cm × 5cm = **125cm^3**

The volume of a cuboid can be found using the formula:

length × width × height



Volume = 4cm × 8cm × 2cm = **64cm^3**

Practise

Supercharge your powers by answering these questions.

1. Write the missing numbers.

72 months = ☐ years

96 hours = ☐ days

63 days = ☐ weeks

1 mark

2. On the line below, mark the point that is 5.8 centimetres from A.

1 mark

3. I saw 3.5 metres of wood into three pieces.
The length of the first piece is 1.37 metres.
The length of the second piece is 108 centimetres.
Calculate the length of the third piece in metres.

Show your method

metres

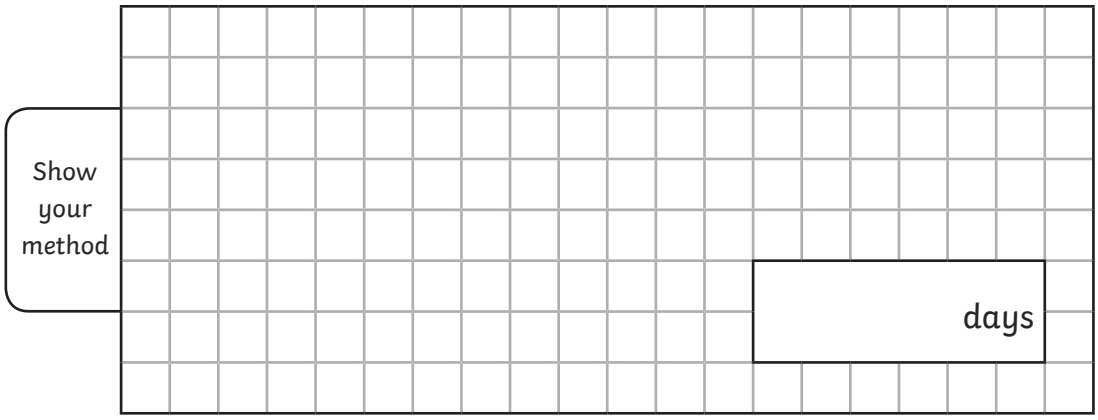
1 mark

total for this page

Practise

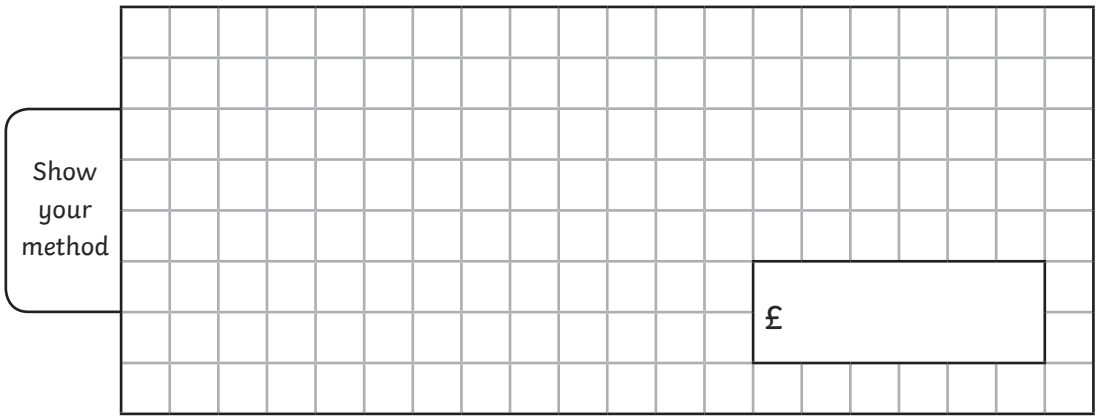
4. A box of cereal contains 1.75kg of cereal.
Every day, I have 25g of cereal for breakfast.
How many days will the box of cereal last?

1 mark



5. I am making hot chocolate ingredient jars to sell.
The hot chocolate powder costs £3.40 per kg.
The marshmallows cost 95p per kg.
10 glass jars cost £5.50.
To make 15 jars, I use 4kg of hot chocolate powder and 2kg of marshmallows. Calculate the total cost of making 15 jars.

2 marks



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Practise

6. A carton contains 954ml of juice. I pour out $\frac{3}{4}$ of a litre. How many millilitres of juice is left in the carton?

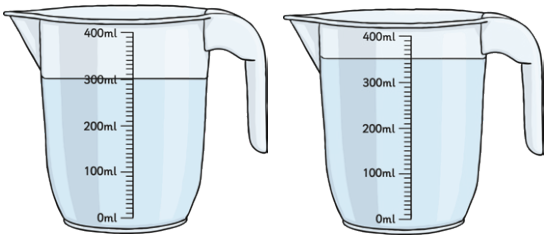
1 mark

Show your method

ml

7. I have 750 millilitres of water in a bottle. I pour some of the water into these two measuring jugs. How many **litres** of water are left in my bottle?

2 marks



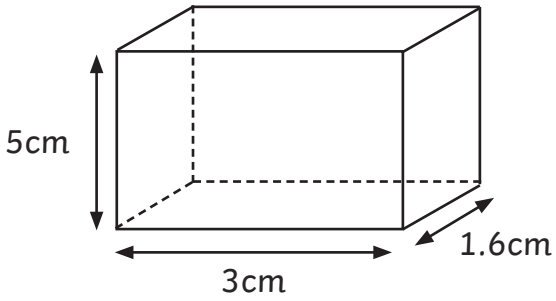
Show your method

litres

total for this page

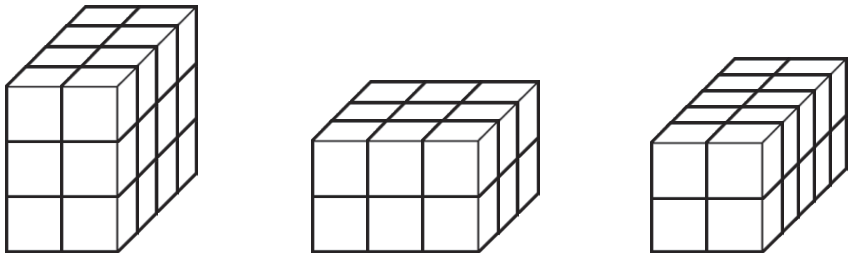
Practise

8. I make this cuboid.



2 marks

Tick the cuboid that has the same volume as my cuboid.



9. A square tile measures 15cm by 15cm.
A rectangular tile is 4cm longer and 3cm narrower than the square tile.
What is the difference in area between the two tiles?

2 marks

Show your method

cm^2

total for this page

Practise

10. The running time of the first film I watch is 93 minutes.
I watch a second film that is 13 minutes longer than the first film.
a) What is the duration of the second film in hours and minutes?

hours | minutes

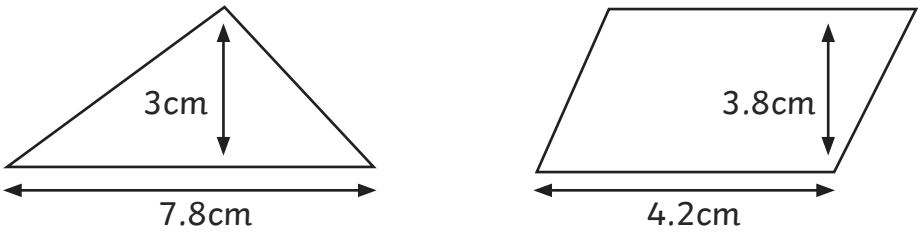
1 mark

I watch a third film that finishes a quarter of an hour before the first film.
b) What is the duration of the third film in hours and minutes?

hours | minutes

1 mark

11. What is the difference in area between the triangle and parallelogram? (Not drawn to scale.)



Show your method

cm^2

2 marks

12. Write the missing numbers.

3 litres = ____ pints

7 inches = ____ cm

10 miles = ____ km

10kg = ____ lbs

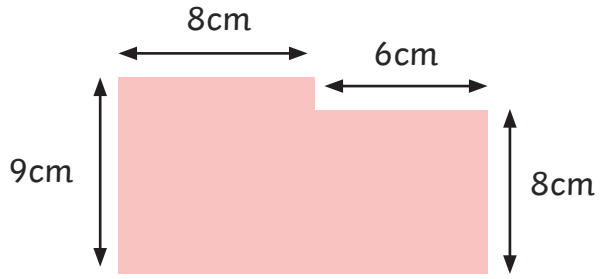
2 marks

total for this page

Practise

13. a) Calculate the perimeter of this polygon.
(Not drawn to scale.)

2 marks

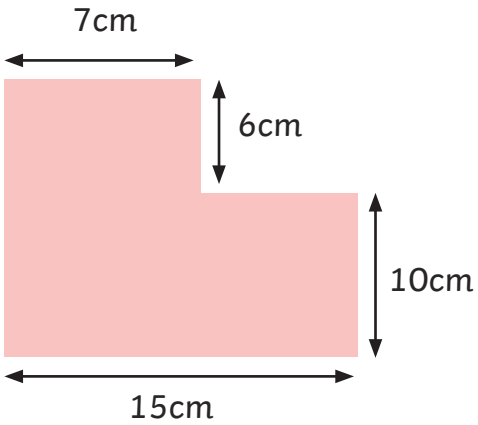


Show your method

cm

b) Calculate the area of this polygon.
(Not drawn to scale.)

2 marks



Show your method

cm^2

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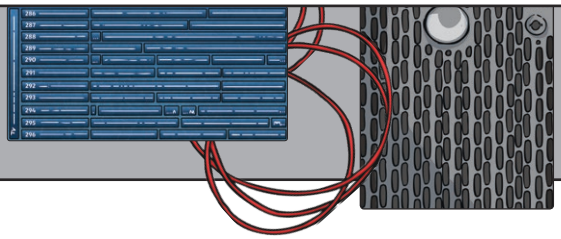
Self-Assessment

Colour in the superhero strength-o-meter to show how you feel about each of these statements:

Use, read, write and convert between standard units of measure.	
Understand and use approximate equivalences between metric units and common imperial units.	
Calculate the perimeter of composite rectilinear shapes.	
Calculate the area of rectangles, triangles and parallelograms.	
Calculate, estimate and compare the volume of cubes and cuboids using standard units.	



Comments