
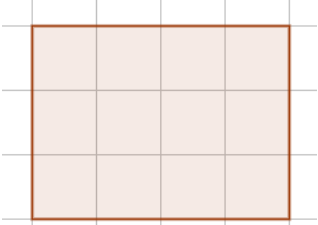




Area

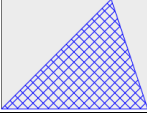
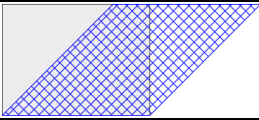
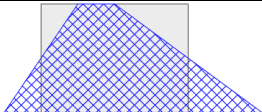
Area is **flat space (2-D)**

Length is distance (1-D), Volume is 'real' space (3-D)

Common Examples:

<p>Square centimetres (cm^2) 5p coin: $1cm^2$</p> 	<p>Area is the number of squares that would fit in a shape:</p>  <p>3 rows of 4 $\Rightarrow 3 \times 4 = 12cm^2$ or 4 columns of 3 $\Rightarrow 4 \times 3 = 12cm^2$</p> <p>Rectangle Area = length \times width</p>
<p>Square metres (m^2) Dining table: $1m^2$</p> 	
<p>Hectares (ha) Small field: $1ha = 10,000m^2 = 0.01km^2$</p>	
<p>Square kilometres (km^2) Small village: $1km^2$</p> 	

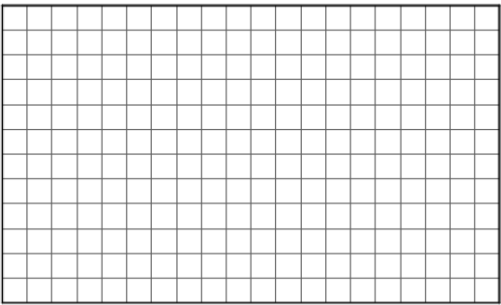
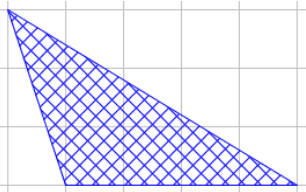
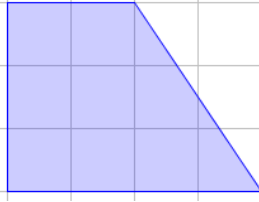
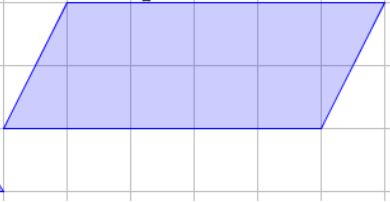
Important Results:

<p>A triangle covers exactly half of a rectangle with the same height and width:</p> 	<p>Triangle: $Area = \frac{1}{2}(base \times height)$</p>
<p>A parallelogram covers a whole rectangle with the same height and width:</p> 	<p>Parallelogram: $Area = base \times height$</p>
<p>A trapezium covers a whole rectangle with the same height and <i>average</i> width.</p> 	<p>Trapezium: $\frac{1}{2}(a + b)h$</p>

To find the area of a **compound shape**, first split it up into rectangles and triangles.

To **estimate** the area of an **irregular shape**, draw on a square grid and count the number of squares it covers.

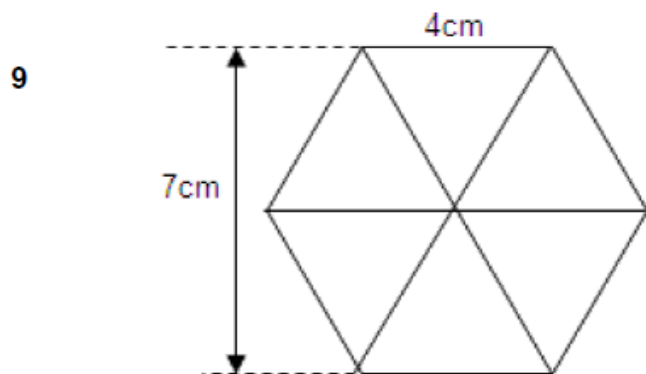
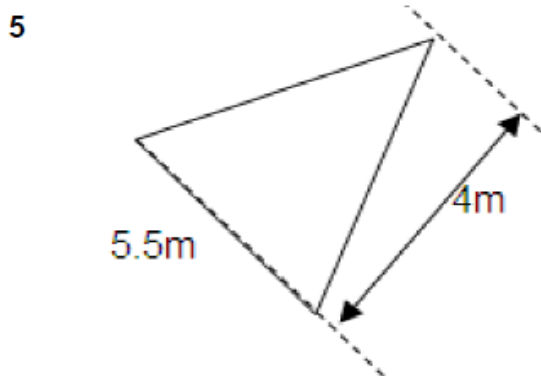
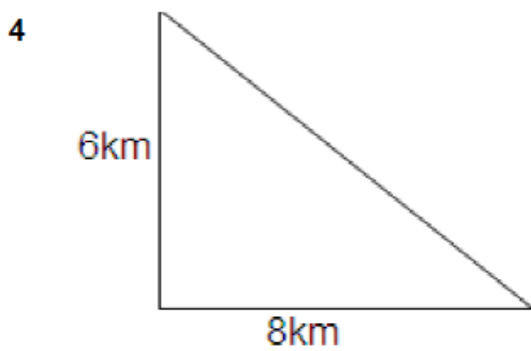
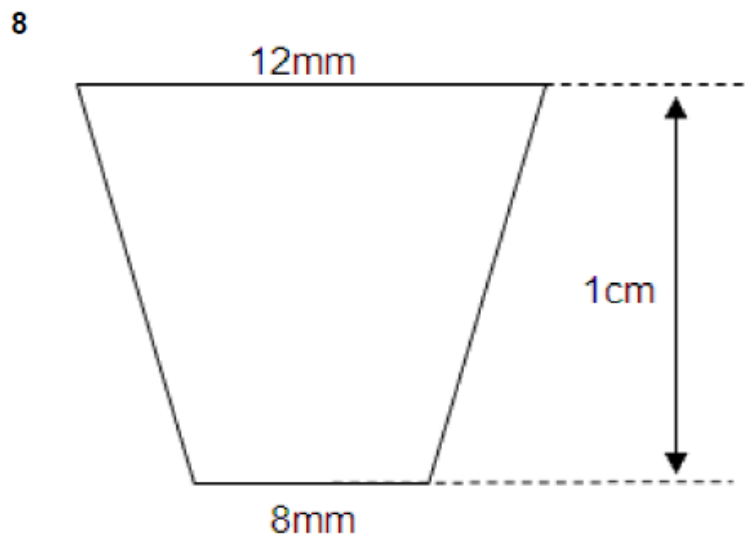
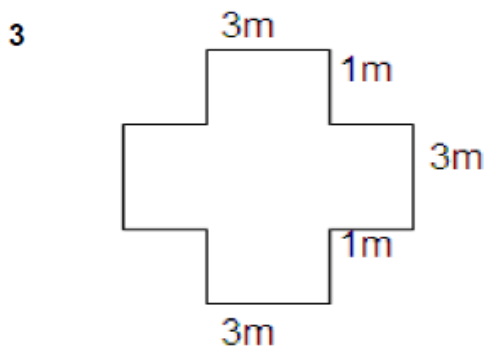
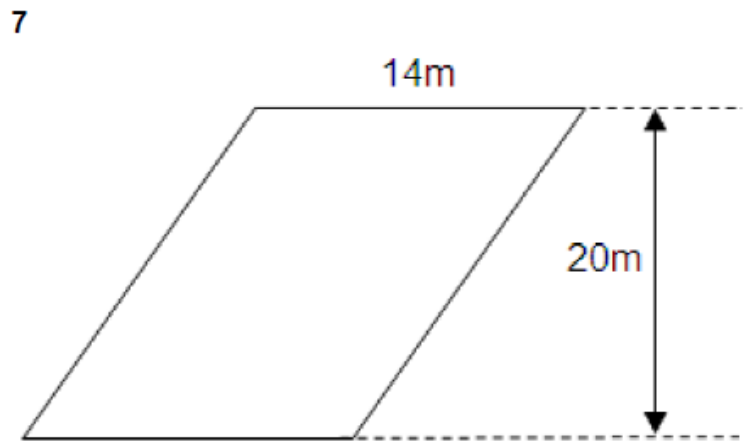
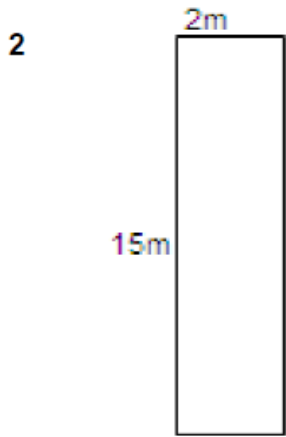
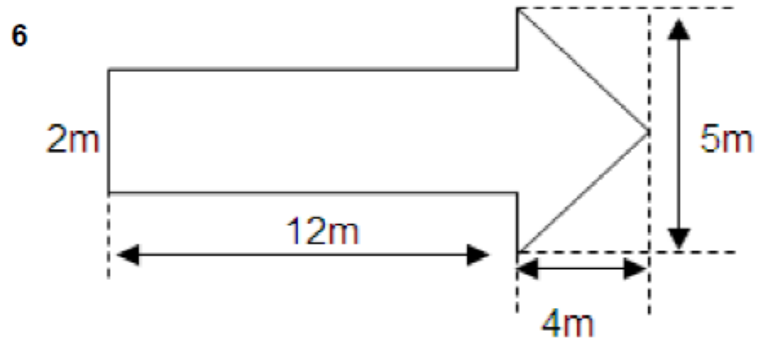
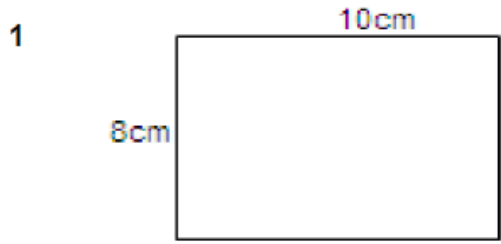
Practice Questions:

<p>Find the area of this sheet of squared paper:</p>  <p>12cm</p> <p>20cm</p> <p>Area = _____ cm^2</p> <p>(Multiplying is usually quicker than counting squares)</p>	<p>Find the area of this triangle, drawn on a cm^2 grid:</p> 
<p>These shapes are also drawn on a cm^2 grid. Which has larger area, and by how much?</p> <p>Shape A Shape B</p>  	

A4 paper measures approximately 20cm by 30cm. Work out the area of a single sheet of A4 paper: _____ cm^2

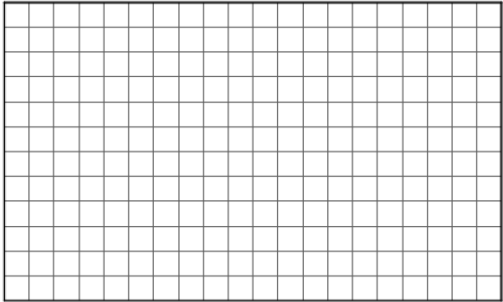
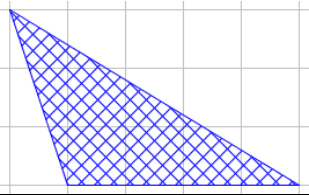
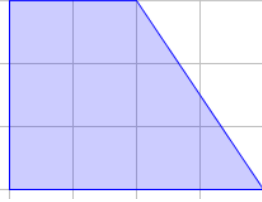
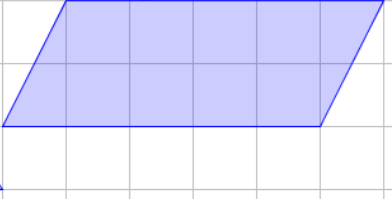
If you halve the length and the width, you get A6 paper. Work out the area of a single sheet of A6 paper: _____ cm^2

Find the area of each of the following shapes (by splitting them into simpler shapes first if necessary). Don't forget to include the units with your answers.



Area SOLUTIONS

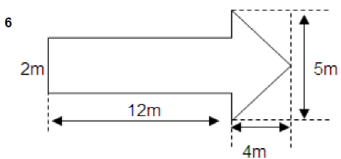
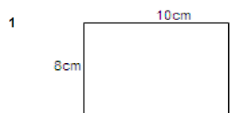
Practice Questions:

<p>Find the area of this sheet of squared paper:</p>  <p style="text-align: center;">20cm</p> <p>Area = $12 \times 20 = 240\text{cm}^2$ (Multiplying is usually quicker than counting squares)</p>	<p>Find the area of this triangle, drawn on a cm^2 grid:</p>  $\frac{1}{2}(b \times h)$ $= \frac{1}{2}(4 \times 3) = 6\text{cm}^2$
<p>These shapes are also drawn on a cm^2 grid. Which has larger area, and by how much?</p>	
<p>Shape A</p> 	<p>Shape B</p> 
<p>Trapezium:</p> $\frac{1}{2}(2 + 4) \times 3$ $= 3 \times 3 = 9\text{cm}^2$	<p>Parallelogram:</p> $5 \times 2 = 10\text{cm}^2$

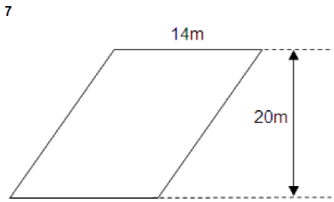
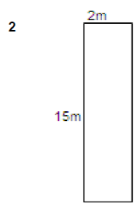
A4 paper measures approximately 20cm by 30cm. Work out the area of a single sheet of A4 paper:
 $20 \times 30 = 600\text{cm}^2$

If you halve the length and the width, you get A6 paper. Work out the area of a single sheet of A6 paper:
 $10 \times 15 = 150\text{cm}^2$

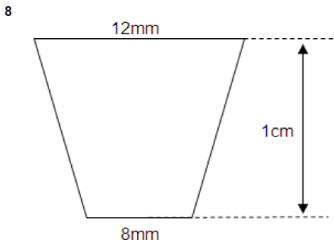
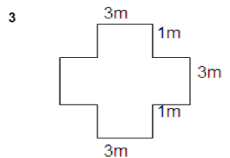
Find the area of each of the following shapes (by splitting them into simpler shapes first if necessary). Don't forget to include the units with your answers.



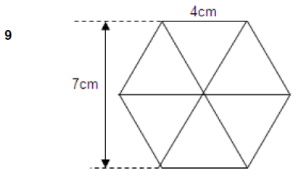
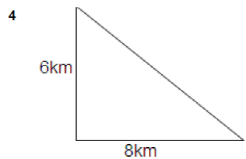
1. 80cm^2 6. 34m^2



2. 30m^2 7. 280m^2

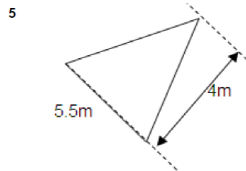


8. 1cm^2 (or 100mm^2)



3. 21m^2

4. 12km^2 9. 42cm^2



5. 11m^2

