

## Worksheet

Answer the questions on this worksheet in the boxes next to the challenge questions.

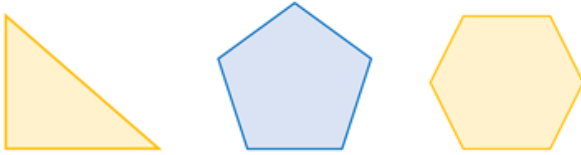
### Remember:

The tasks are arranged in 3 challenges that get progressively more difficult.

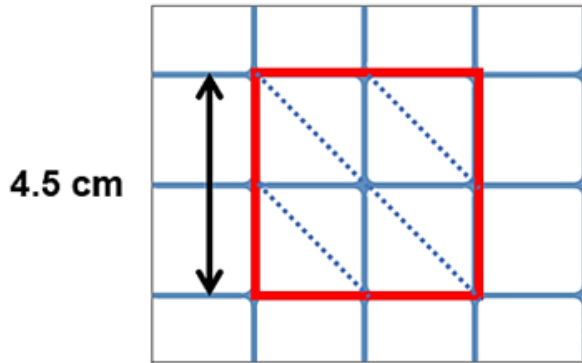
- Challenge 1 is a “mild” challenge, if you are not confident
- Challenge 2 is “spicy”, a little bit more challenging, if you are feeling confident and find the first challenge too easy.
- Challenge 3 is “hot”. The questions are designed to challenge you and can be tricky.

You can choose to do just one challenge or more than one, it is up to you. As a guide, if you are consistently getting everything correct, you should move up a challenge. If you are struggling on every question; move down a challenge.

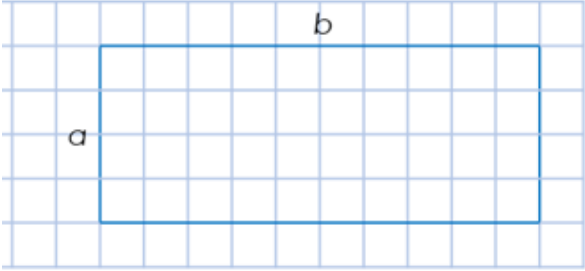
### Challenge 1:

Question	Answer
<p>1.</p> <p>Which of these shapes has perpendicular lines?</p>  <p>Can you name any others?</p>	

2.  
Using the scale provided, calculate the length of the other 3 sides of this quadrilateral.  
Explain the reasons for your answer.

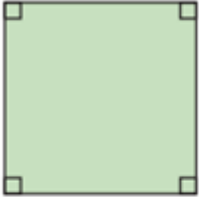


**Challenge 2:**

Question	Answer
<p>1. Look at the shape below. Side <math>a</math> is 8cm. Use the grid and your knowledge of the shape's properties to work out the length of side <math>b</math>.</p>  <p>The figure shows a grid with a rectangle. The left vertical side is labeled 'a' and the top horizontal side is labeled 'b'. The rectangle is 4 units high and 8 units wide on the grid.</p>	

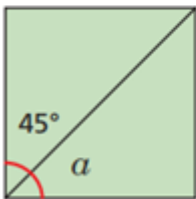
2.

Here is a square.



a) What is the size of each of the angles?

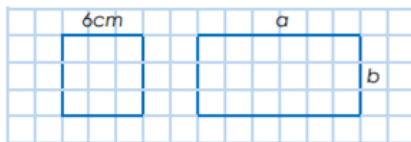
A diagonal line is drawn across the square.



b) Explain why angle  $a$  is also  $45^\circ$ .

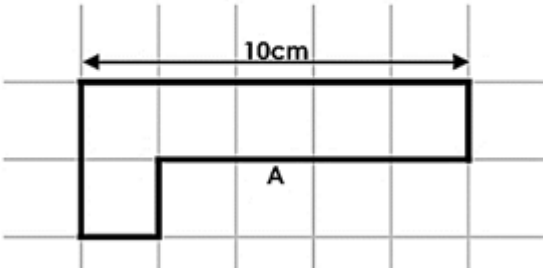
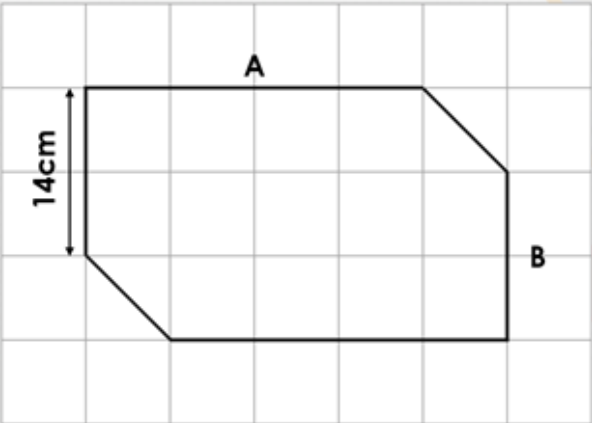
3.

Use the square to calculate the missing lengths of the rectangle.



Side  $a$  is \_\_\_\_ cm and side  $b$  is \_\_\_\_ cm.

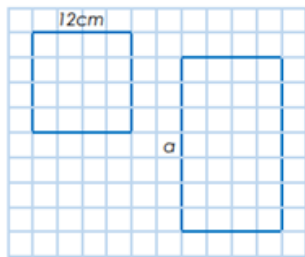
**Challenge 3:**

Question	Answer
<p>1. Side A is 6cm. True or false?</p>  <p>The diagram shows a shape on a grid. The top horizontal side is labeled '10cm' and spans 10 grid units. The bottom horizontal side is labeled 'A' and spans 6 grid units. The shape has a vertical left side of 2 units, a vertical right side of 2 units, and a bottom-left corner that is a square of 2x2 units.</p>	
<p>2. Calculate the length of <b>A</b> &amp; <b>B</b>. <i>Hint: Think about how many cm the length of each side is worth.</i></p>  <p>The diagram shows a trapezoid on a grid. The left vertical side is labeled '14cm' and spans 14 grid units. The top horizontal side is labeled 'A' and spans 10 grid units. The right vertical side is labeled 'B' and spans 4 grid units. The bottom horizontal side spans 10 grid units. The top-right and bottom-left corners are cut off by diagonal lines.</p>	

3.

True or False?

Side  $a$  is 28cm long.



Prove it!