Problem Solving: PERIMETER
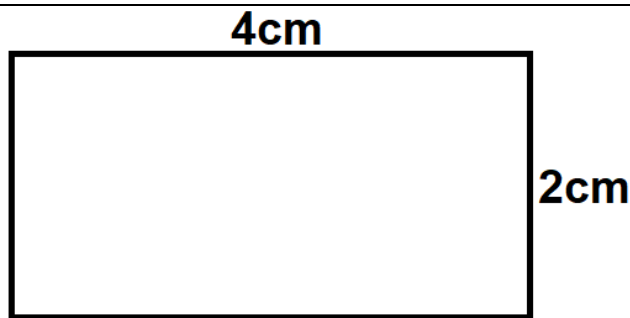
[1a] Cutting the Rectangle
Take a look at the rectangle top right.
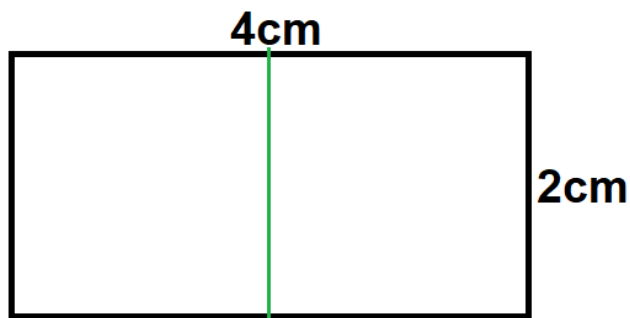
Give the perimeter of the top rectangle.

4cm

2cm

[1b]
Now, imagine cutting this rectangle in half so that two squares are created (see rectangle bottom right).

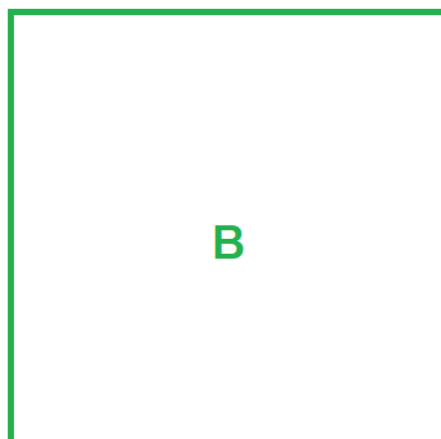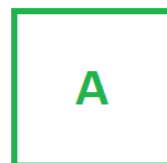**Give the total perimeter of both squares.**

4cm

2cm

[2] Big Square, Little Square
The perimeter of square "A", to the right, is 16 cm.

The perimeter of square "B", to the right, is four times the perimeter of square "A".
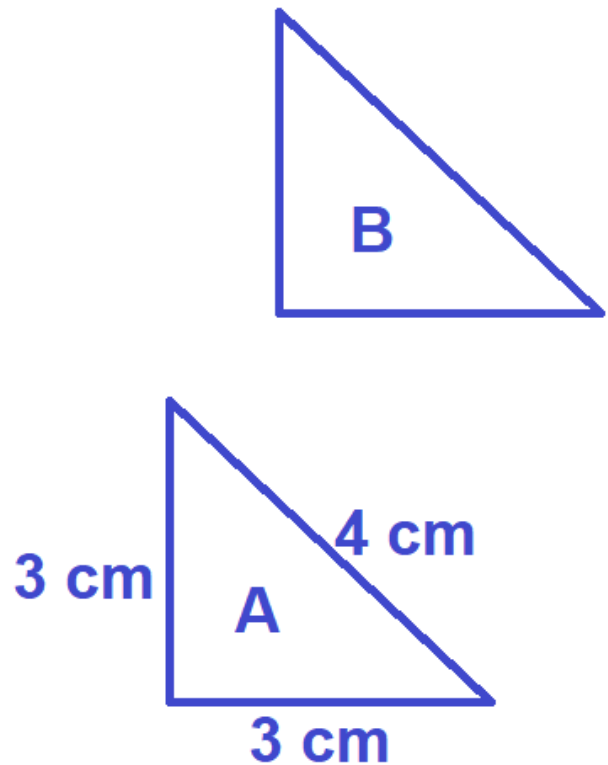
What is the length of each side of square "B"?

A

B

[3] Right-Angle Triangles x 2
Right-angled triangles "A" and "B", to the right, are equivalent.

Imagine you rotate right-angled triangle "B" 180° and then put the longest sides of both triangles together so that you now have a square.
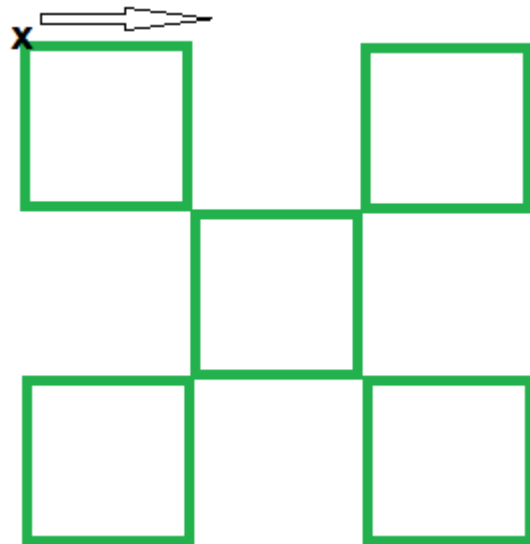
Give the perimeter of this newly-made square.

B

4 cm

3 cm

A

3 cm

[4] Five Squares and the Little Ant
The diagram to the right is made up of 5 squares. Each of the outer squares touches the central square with the tip of one corner only.

Now, imagine a little ant. Imagine that little ant starting at point, "x" on the diagram.

Now, imagine that this little ant starts walking to the right, and walks along ALL the green lines perfectly until it returns to the point at which it started.

If this little ant has travelled a total of 120cm, what is the length of one side of any of the squares?

x

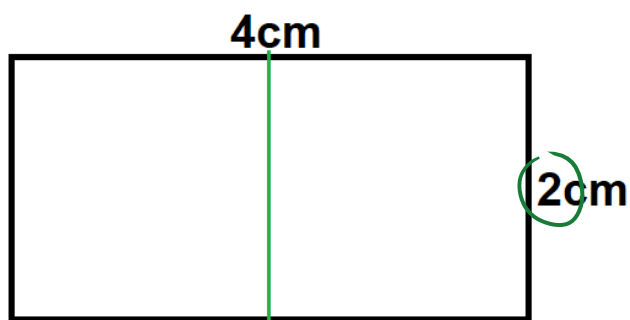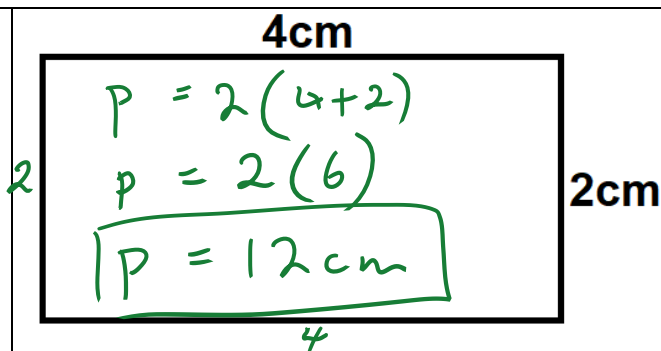# SOLUTIONS

[1a] **Cutting the Rectangle**
Take a look at the rectangle top right.
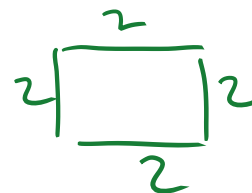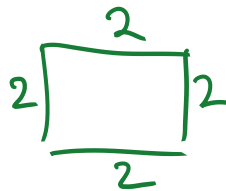
Give the perimeter of the top rectangle. 12 cm

[1b]
Now, imagine cutting this rectangle in half so that two squares are created (see rectangle bottom right). $\longrightarrow$

Give the total perimeter of both squares. 16 cm

4cm

$P = 2(4+2)$
$P = 2(6)$
$P = 12 cm$

2

4

2cm

4cm

2cm

$P = 2(2+2)$
$P = 2(4)$
$P = 8(2)$
$P = 16$

2 2 2

2 2 2

2 2

[2] Big Square, Little Square

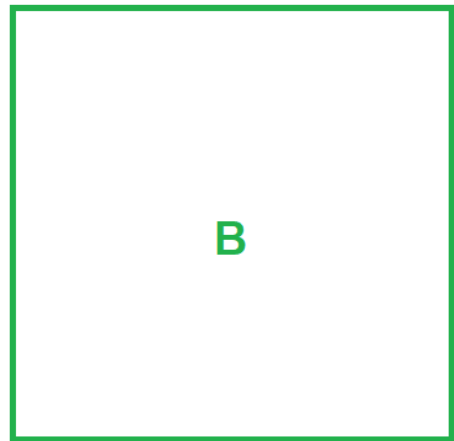The perimeter of square "A", to the right, is 16 cm.

The perimeter of square "B", to the right, is four times the perimeter of square "A". $6 \times 4 = 24$

What is the length of each side of square "B"?

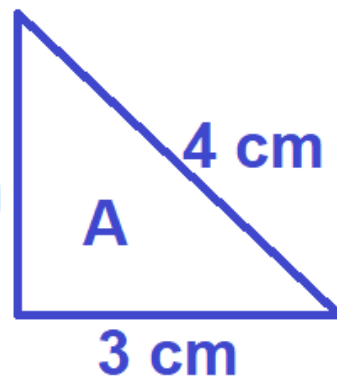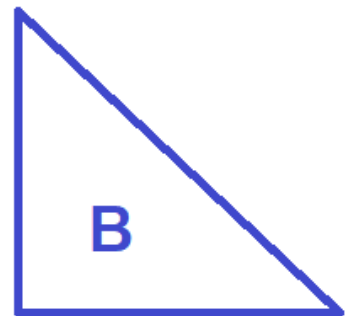$\frac{24}{4} = \boxed{6 \ cm}$

A

6 cm

24cm

B

[3] Right-Angle Triangles x 2

Right-angled triangles "A" and "B", to the right, are equivalent.

Imagine you rotate right-angled triangle "B" 180° and then put the longest sides of both triangles together so that you now have a square.

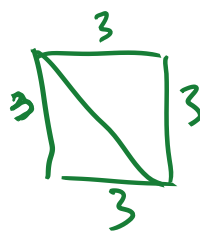**Give the perimeter of this newly-made square.** $\boxed{12 \ cm}$

B

3 cm 4 cm
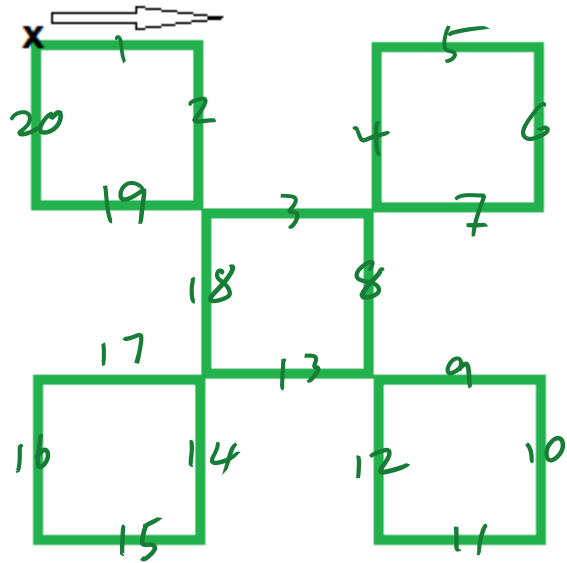
A

3 cm

$= 3 \times 4$

$= 12 \ cm$

[4] Five Squares and the Little Ant

The diagram to the right is made up of 5 squares. Each of the outer squares touches the central square with the tip of one corner only.

Now, imagine a little ant. Imagine that little ant starting at point, "x" on the diagram.

Now, imagine that this little ant starts walking to the right, and walks along ALL the green lines perfectly until it returns to the point at which it started.

If this little ant has travelled a total of 120cm, what is the length of one side of any of the squares? 6 cm

$$\frac{120}{20} = 6$$