23 × 2 = 46
46 + 1 = 47

47

1. Here are five straight rods.
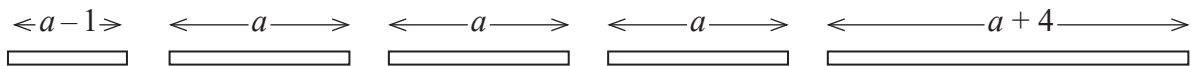
$\Leftarrow a-1 \Rightarrow$ $\Leftarrow\!\!—a—\!\!\Rightarrow$ $\Leftarrow\!\!—a—\!\!\Rightarrow$ $\Leftarrow\!\!—a—\!\!\Rightarrow$ $\Leftarrow\!\!———a+4———\!\!\Rightarrow$

All measurements are in centimetres.

The total length of the five rods is L cm.

Find a formula for L in terms of a.
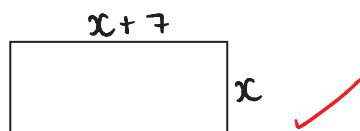Write your formula as simply as possible.

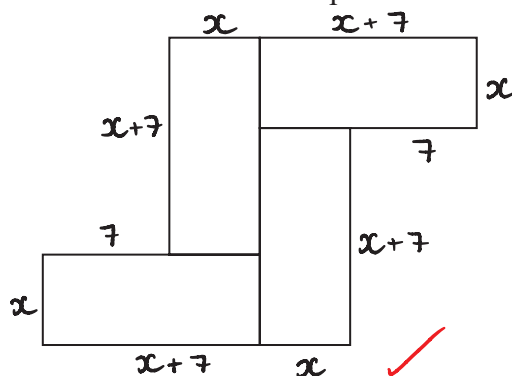$$L = a - 1 + a + a + a + a + 4$$

$$L = 5a + 3$$

$5a + 3$

(Total for Question   is 3 marks)

2.   Here is a rectangle.

$x+7$

x ✓

The length of the rectangle is 7 cm longer than the width of the rectangle.

4 of these rectangles are used to make this 8-sided shape.

x $x+7$

$x+7$

x

7

7

$x+7$

x

$x+7$ x ✓

$$x+7-x$$
$$=7$$

The perimeter of the 8-sided shape is 70 cm.

Work out the area of the 8-sided shape.

Let x be width of the rectangle

$70 = x+7+x+7+x+7+x+x+7+x+7+x+7+x$ ✓

$70 = 8x + 42$

(-42) (-42)

$28 = 8x$

$(\div 8)$ $(\div 8)$

$3.5 = x$ ✓

Area of rectangle $=$ width $\times$ length

$= x(x+7)$

$= 3.5 \times (3.5 + 7)$

$= 3.5 \times 10.5$

$= 36.25$

$36.25 \times 4 = 147 cm^2$

............147.... ✓ .... cm²

(Total for Question   is 5 marks)