

4th - exercise:

$$\begin{aligned}
 a) \quad A_{ABCD} &= l \times w && l: \text{length}; w: \text{width} \\
 &= AB \times BC \\
 &= (2x+1)(2x-1) = (4x^2-1) \text{ cm}^2
 \end{aligned}$$

$$\begin{aligned}
 A_{DEFG} &= \text{side} \times \text{side} \\
 &= CF \times FE \\
 &= x \cdot x \\
 &= x^2 \text{ cm}^2
 \end{aligned}$$

$$b) \quad A_{\text{shaded region}} = A_{ABCD} - A_{DEFG} = 26$$

$$= (4x^2-1) - x^2 = 26$$

$$= 3x^2 - 1 = 26$$

$$\Rightarrow 3x^2 = 27$$

$$x^2 = \frac{27}{3}$$

$$x^2 = 9$$

$$\Rightarrow x = \pm 3$$

$x = 3$ accepted & $x = -3$ rejected

$$\begin{aligned}
 c) \quad \text{length} = AB &= (2x+1) \\
 &= 2(3)+1 \\
 &= 7 \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 \text{width} = BC &= (2x-1) \\
 &= 2(3)-1 \\
 &= 5 \text{ cm}
 \end{aligned}$$