

# Worksheet (4) | Lower Secondary Stage (6-8)

1<sup>st</sup> Semester | 2023-2024

**Subject:** Math

**Class:** Grade 7

Name:.....

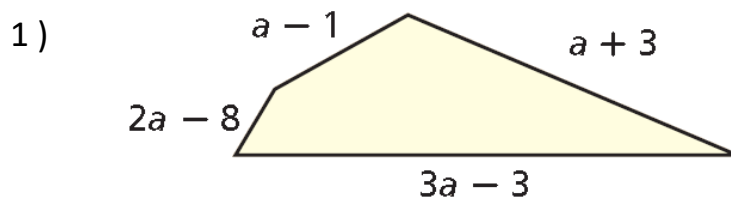
**Objectives:**

- Simplifying algebraic expressions.

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Exercise 1 :

Write and simplify an expression for the perimeter of each shape below .



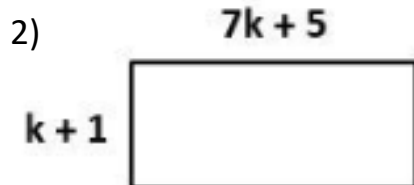
\*\* find the value of perimeter when :  $a = 6$

$$P = (a-1) + (a+3) + (2a-8) + (3a-3)$$

$$P = 7a - 9$$

$$P = 7(6) - 9$$

$$= 42 - 9 = 33$$



\*\* find the value of perimeter when :  $k = 1.5$

$$P = 2L + 2W$$

$$= 2(7k+5) + 2(k+1)$$

$$= 14k+10 + 2k+2$$

$$P = 16k+12$$

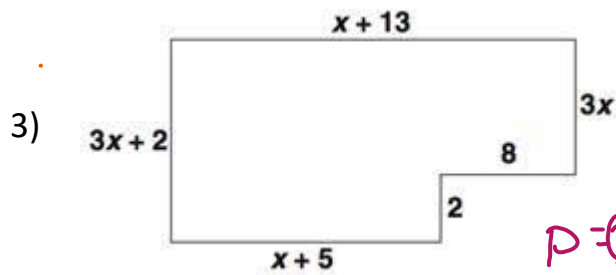
$$P = 6(1.5) + 12$$

$$= 6 * 1\frac{1}{2} + 12$$

$$= 6 * \frac{3}{2} + 12$$

$$= 9 + 12 = 21$$

$$\text{or } \rightarrow \frac{1.5 * 6}{9.0} * 12$$



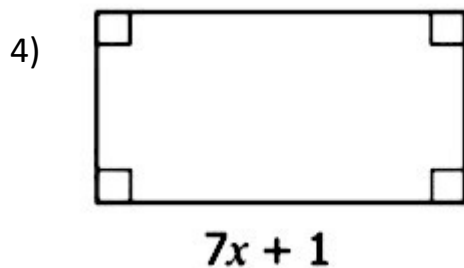
$$P = (x+13) + 3x + 8 + 2 + (x+5) + (3x+2)$$

$$= 8x + 30$$

\*\* find the value of perimeter when :  $x = 0.5$

$$P = 8\left(\frac{1}{2}\right) + 30$$

$$= 4 + 30 = 34$$



$$P = 2L + 2W$$

$$= 2(x-3) + 2(7x+1)$$

$$= 2x - 6 + 14x + 2$$

$$P = 16x - 4$$

\*\* find the value of perimeter when :  $x = 3.25$

$$P = 16\left(3\frac{1}{4}\right) - 4$$

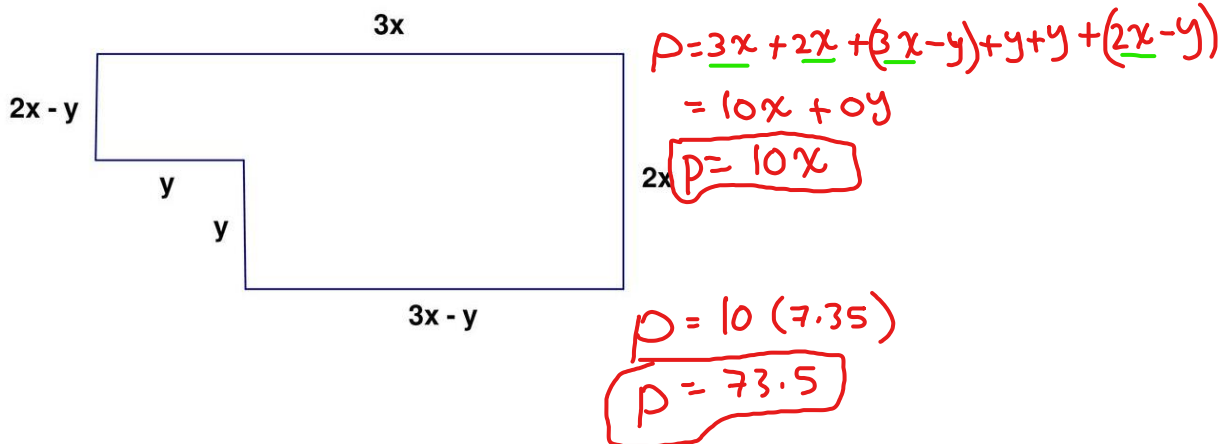
$$= 16 * \frac{13}{4} - 4$$

$$= 52 - 4 = 48$$

or

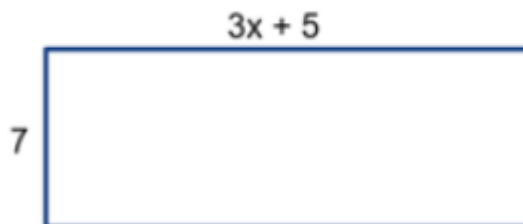
$$\begin{array}{r} 3.25 * \\ \underline{16} \\ 1950 \\ \underline{3250} \\ 5200 \end{array}$$

5) find the value of perimeter when :  $x = 7.35$



Exercise 2 :

- a) Write an expression to find the area of the rectangle.  
Simplify the expression.



$$A = L * W$$

$$= 7(3x + 5)$$

$$A = 21x + 35$$

- b) Use your answer to part a to find the value of area when :  $x = 1\frac{2}{3}$

$$A = 21\left(1\frac{2}{3}\right) + 35$$

$$= \frac{21}{1} * \frac{5}{3} + 35$$

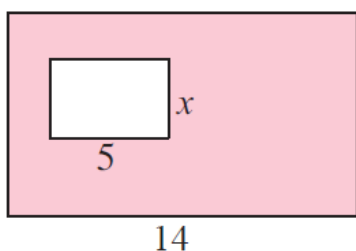
$$= 35 + 35$$

$$A = 70$$

Exercise 3 :

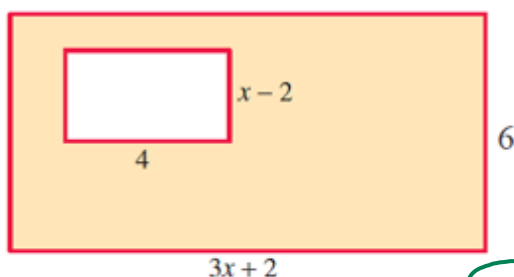
1) Write down an expression for the shaded area of each shape below :

a)



$$\begin{aligned} \text{shaded. } A &= A_{\text{big}} - A_{\text{small}} \\ x+6 &= L_1 * W_1 - L_2 * W_2 \\ &= 14(x+6) - 5(x) \\ &= 14x + 84 - 5x \\ \text{shaded. } A &= 9x + 84 \end{aligned}$$

b)



$$\begin{aligned} \text{shaded. } A &= A_{\text{big}} - A_{\text{small}} \\ &= L_1 * W_1 - L_2 * W_2 \\ &= 6(3x+2) - 4(x-2) \\ &= 18x + 12 - 4x + 8 \end{aligned}$$

$$\text{shaded. } A = 14x + 20$$

2) Find the shaded area in **exercise 3 b** , when  $x = 2.5$

$$\text{shaded. } A = 14x + 20$$

$$= 14(2\frac{1}{2}) + 20$$

$$= \frac{14}{1} * \frac{5}{2} + 20 = 35 + 20$$

$$= 55$$