

Station #4

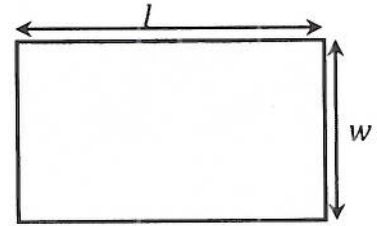
Perimeter and Area

Perimeter

The **perimeter** of a shape is the **total length of its sides**.

Perimeter of this rectangle $P = l + w + l + w$

This can also be written as $P = 2l + 2w$ or $P = 2(l + w)$



Area

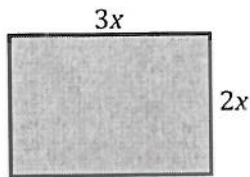
Area measures the **surface** of something.

Area of a rectangle = length \times width

For the rectangle shown, the area $A = lw$

Sometimes you may need to find other algebraic expressions for perimeters and areas.

Examples

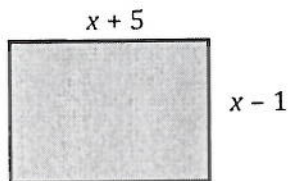
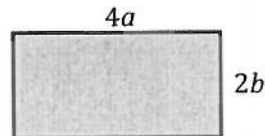


$$\text{Perimeter} = 3x + 2x + 3x + 2x = 10x$$

$$\text{Area} = 3x \times 2x = 6x^2$$

$$\text{Perimeter} = 4a + 2b + 4a + 2b = 8a + 4b$$

$$\text{Area} = 4a \times 2b = 8ab$$



$$\text{Perimeter} = x + 5 + x - 1 + x + 5 + x - 1 = 4x + 8$$

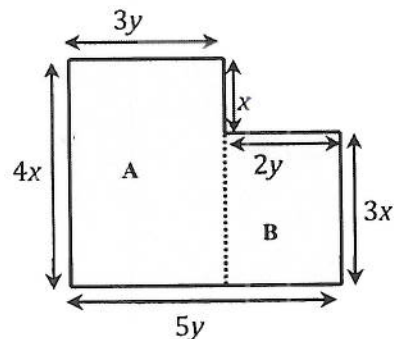
$$\text{Area} = (x + 5)(x - 1) = x^2 - x + 5x - 5 = x^2 + 4x - 5$$

$$\begin{aligned} \text{Perimeter} &= 4x + 3y + x + 2y + 3x + 5y \\ &= 8x + 10y \end{aligned}$$

$$\text{Area of A} = 4x \times 3y = 12xy$$

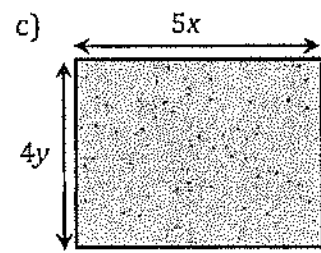
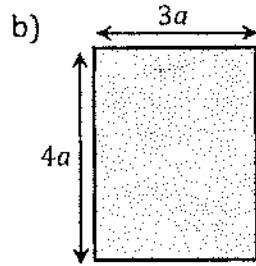
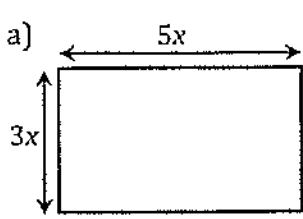
$$\text{Area of B} = 3x \times 2y = 6xy$$

$$\text{Total area} = 12xy + 6xy = 18xy$$

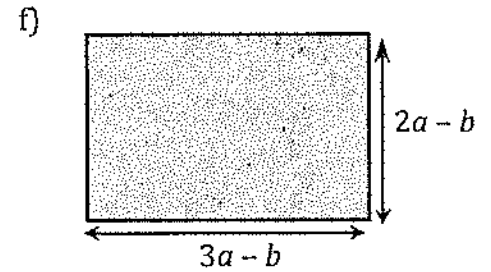
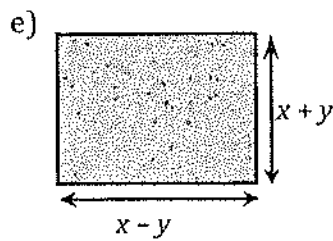
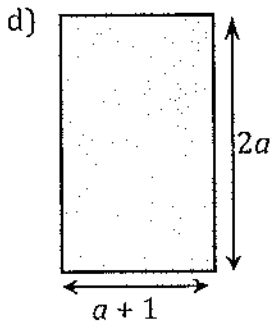
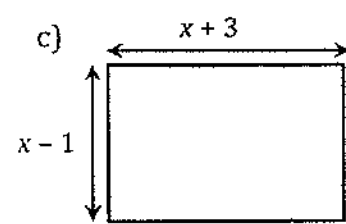
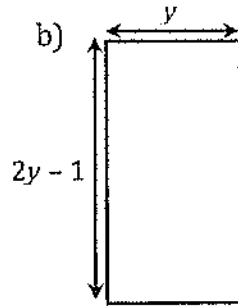
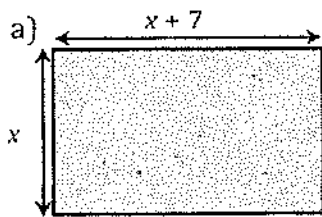


Perimeter and Area Questions

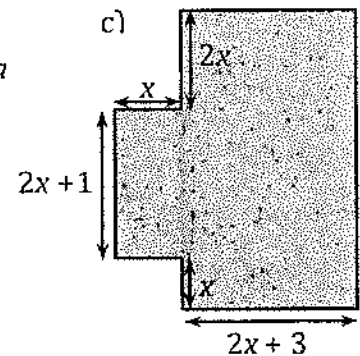
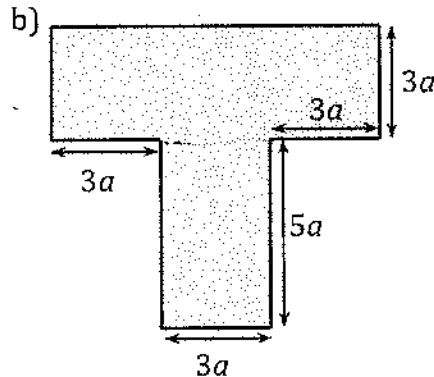
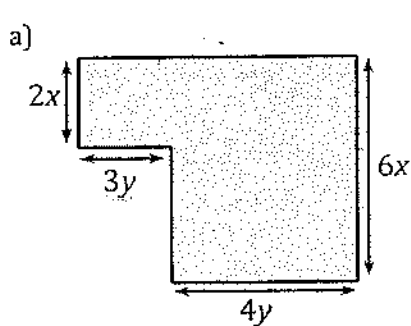
1. Find algebraic expressions for the perimeter and area of each rectangle.



2. Find algebraic expressions for the perimeter and area of these rectangles.



3. Find algebraic expressions for the perimeter and area of these shapes.



Create your own perimeter and area problems. One of them should be as above. The other is to be a word problem. Exchange it with a person in your group and see if they can solve it.

