

Warm-up

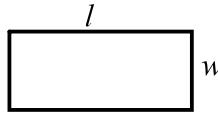
Solve

1) $5x + 8 = x$

2) $6 + 3x = x - 2$

Applications of Solving Equations.

Example 1) An equation for the perimeter of a rectangle is



A rectangle is shown with its top side labeled l and its right side labeled w .

$$P = 2l + 2w$$

a) Determine P when $l = 5$ and $w = 3$

b) Determine l when $w = 4$ and $P = 48$.

Example 2) Jackie plans to start a business selling silk screened T-shirts. She must purchase some equipment at a cost of \$3500. Jackie will spend \$6 per shirt on materials.

Jackie's total cost in dollars can be represented by the expression

$$3500 + 6x$$

What does x represent?

Explain how this expression represents her total cost.

Jackie sells each shirt for \$11. What expression can we use to represent her total income?

When Jackie's income is equal to her total cost she breaks even. This situation can be modelled by the equation.

$$11x = 3500 + 6x$$

Solve the equation to find how many t-shirts Jackie needs to sell to break even.