

Solving Equations



$$2x^3$$



$$3x + 2$$



$$5x^2 + 1 = 2$$



$$4n + 20 = 32$$

Strategy: Do the opposite operation to 'get rid of' items surrounding our variable.

$$x + 4 \longrightarrow x$$

$$3y \longrightarrow y$$

$$\frac{z}{6} \longrightarrow z$$

$$3n - 5 = 13$$

When the solution is not a whole number

$$4 + 6z = 18$$

$$3 + \frac{x}{5} = 28$$

Solve the following equations, showing full working.

1

$$11 = \frac{6x}{7} + 9$$

2

$$3 = \frac{\frac{6}{5}x + 3}{8} + 9$$

What happens if variable appears on both sides?

$$5a + 3 = 2a + 9$$

$$11x - 4 = 2x - 13$$

$$3y + 4 = 8y - 5$$

$$5 = 3 - 3x$$



$$3x - 3 = x + 5$$

$$3 - 5x = 5 + 2x$$

If there's any brackets, simply expand them first!

$$2(2x + 3) = 9$$

$$3 - 4(2x - 3) = 7x$$

$$7(3x - 1) = 21 + 14x$$

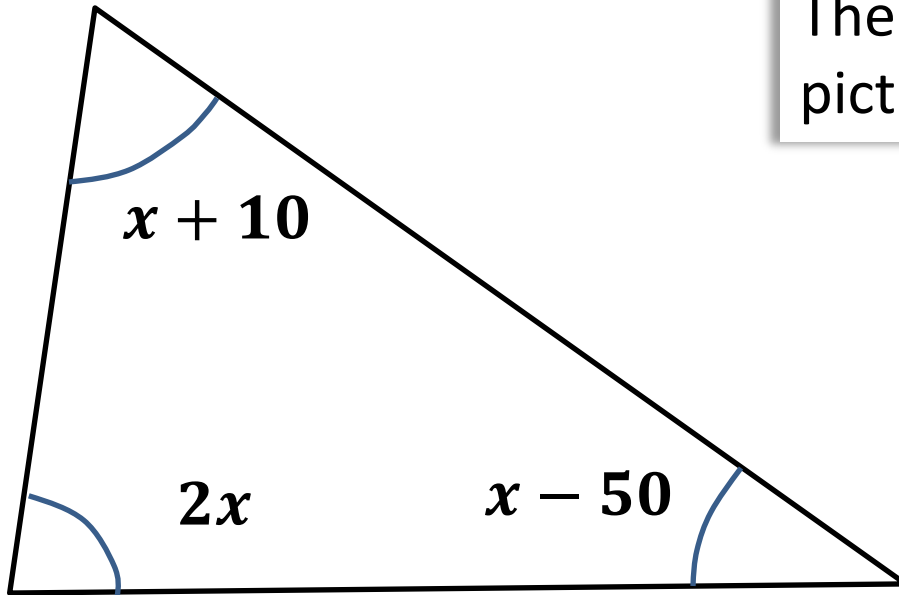
$$5 - 2(x + 2) = 4 - 3(2 - x)$$

Solve the following.

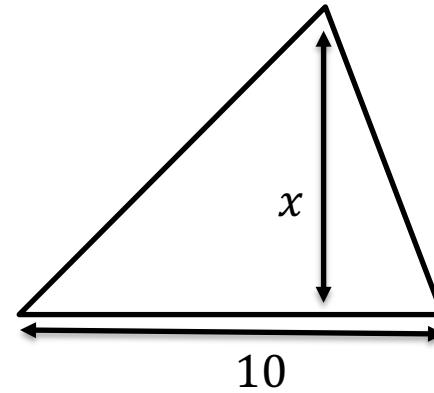
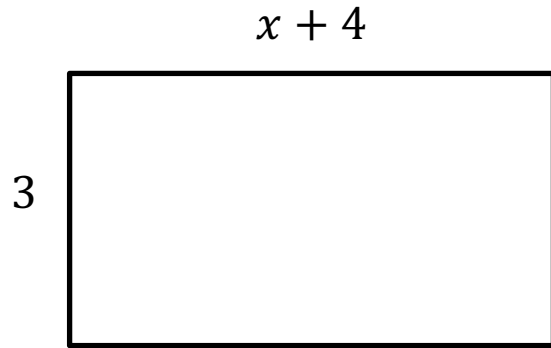
$$1 \quad x - 2(2 - x) = 3(x - 2) - x$$

$$2 \quad \frac{1}{2}x + \frac{3}{4}(x - 2) = \frac{1}{3}(2x - 3)$$

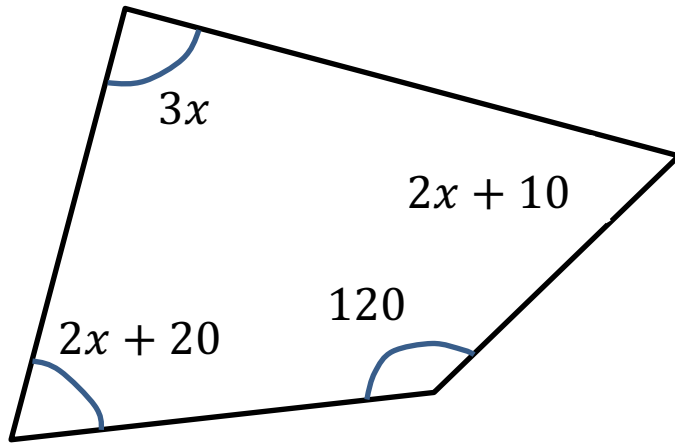
Forming and Solving Equations



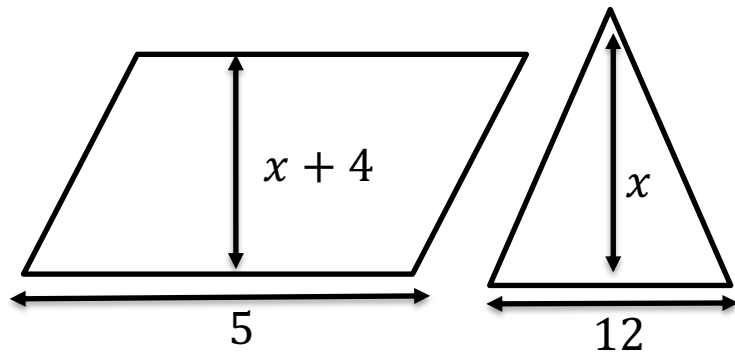
The angles of a triangle are as pictured. Determine x .



The rectangle and triangle have the same area. Determine the width of the rectangle.



- 1 The following diagram shows the angles of a quadrilateral. Determine x .



- 2 The area of the triangle is 1 more than the area of the parallelogram. Determine x .

Enoch is 5m shorter than Alex. Hajun is double the height of Alex. Their combined height is 35m. Find Alex's height

A The length of the rectangle is three times the width. The total perimeter is 56m. Determine its width.

B In 4 years time I will be 3 times as old as I was 10 years ago. How old am I?

