

1 Expression, equation or formula?

a) Name each one: expression, equation, formula

or identity. $4(t - 2) \equiv 4t - 8$, $A = \pi r^2$, $6 - 2k$, $\frac{3t+5}{4} = 5$

b) Solve the equation.

a) identity, formula, expression, equation

b) $3t + 5 = 20$, $t = 5$

2 Solving two step equations

Solve

a) $2.5x + 4 = -6$

b) $11 = 3 - \frac{x}{5}$

a) $2.5x = -10$, $x = -4$

b) $\frac{x}{5} = -8$, $x = -40$

3 Two step equations: forming

A quadrilateral has angles x° , $2x^\circ$, $(3x - 20)^\circ$ and $(x + 30)^\circ$.

a) Find x .

b) Find the difference between the largest and smallest angles.

a) $7x + 10 = 360$, $x = 50$

b) 50, 100, 130, 80: $130 - 50 = 80^\circ$

4 Equations with brackets

Solve

a) $-2(3x - 4) = 23$

b) $3(2x - 1) - 2(5 - x) = 11$

a) $-6x + 8 = 23$, $x = -2.5$

b) $8x - 13 = 11$, $x = 3$

Linear equations revision mat answers

5 Equations: the unknown on both sides

Solve

a) $9 - 2x = 4x + 12$

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

a) $-6x = 3$, $x = -0.5$

b) $3x - 1 = 8(x - 3)$

$3x - 1 = 8x - 24$, $x = 4.6$

6 Unknown on both sides: forming

Ali has £120 and saves £15 a week. Ben has £40 and saves £25 a week.

a) After how many weeks do they have the same amount?

b) After how many weeks does Ben first have £100 more than Ali?

a) $120 + 15w = 40 + 25w$, $w = 8$

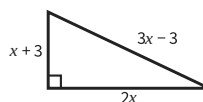
b) $10w - 80 = 100$, $w = 18$

7 Forming equations: perimeter

The perimeter of this right angled triangle is 36 cm. Lengths are in cm.

a) Find x .

b) Find the area of the triangle.



Not drawn to scale

a) $6x = 36$, $x = 6$

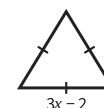
b) $\frac{1}{2} \times 12 \times 9 = 54 \text{ cm}^2$

8 Forming equations: equal perimeters

The equilateral triangle and the square have the same perimeter. Lengths are in cm.

a) Find x .

b) Find the length of a side of each shape.



3x - 2



x + 6

Not drawn to scale

a) $9x - 6 = 4x + 24$, $x = 6$

b) triangle 16 cm, square 12 cm