

Forming Expressions and Equations

Letters in **expressions** represent missing numbers

Add 14 to a $a + 14$

Subtract 20 from b $b - 20$

Multiply c by 4 $4c$

12 more than d $d + 12$

Multiply e by 3 and subtract 5 $3e - 5$

Add 12 to f and then multiply by 2 $2(f + 12)$

$a + 14 = 20$

$b - 20 = 15$

$4c = 28$

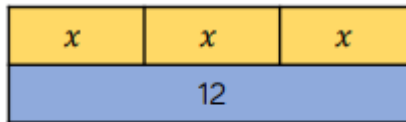
$d + 12 = 30$

$3e - 5 = 10$

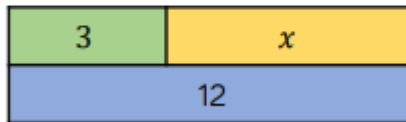
$2(f + 12) = 44$

An **equation** includes the = sign
Expressions on either side of the equals sign have equal value

One Step and Two Step Equations



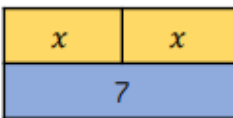
$3x = 12$
So $x = 4$



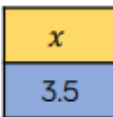
$12 = 3 + x$
So $x = 9$



$2x + 5 = 12$



$2x = 7$



$x = 3.5$

Vocabulary

expression	A group of numbers, letters and operation symbols
equation	A number statement containing the = sign
formula	A type of equation that shows the relationship between variables
variable	A symbol for a value we don't yet know – this is usually a letter
substitution	Putting values where letters are
value	A number or the result of a calculation

Formulas or Formulae

We often use **formulae** in geometry

Area of a rectangle

= length x width $A = L \times W$

Area of a triangle

= (base x height) ÷ 2

$A = (b \times h) \div 2$

Equations with Unknown Values

$ab = 18$

a	b
1	18
2	9
3	6
6	3
9	2
18	1

$2a + b = 10$

a	b
2	6
3	4
4	2
5	0

In equations with two unknown values, there may be several possible answers

Substitution

Values can be substituted for the letters

$w = 3$ $x = 5$ $y = 2.5$

$w + 10$

$w + x$

$y - w$