

ALGEBRA

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Simplification

Simplify the following

$$b \times a \times 7$$

$$4x - 6x + 5x$$

$$7a + 5b - 3a - 8b$$

$$8d \times 7d$$

$$4x^2 \times 3x$$

LINEAR EQUATIONS

Solve the following equations:

1	$3x + 5 = 11$	
2	$4x - 2 = 18$	
3	$2x + 1 = 5x - 2$	
4	$4x + 8 = 20 - 2x$	
5	$3(2x + 1) = 7 + 2x$	

Make equations [here](#). Unlimited maths [here](#).

LINEAR INEQUALITIES

Represent the following ranges in interval notation and on a number line

1. $x \geq 3$

2. $x < 7$

3. $4 < x < 7$

4. $4 \leq x \leq 7$

5. $4 \leq x < 7$

6. $3 \leq x+2 < 6$

7. $4 \leq 3x+1 < 13$

BRACKETS

Single Brackets

Whatever is outside a bracket multiplies _____ inside the bracket

1 $5(x + 3)$

2 $2(3x - 4)$

3 $4x(2x + 1)$

4 $5ab(2a + 3b)$

Pairs of Brackets

Every part of the _____ must multiply
_____ part of the second bracket (this is called 'eyebrows, chin
and a smile').

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

1 $(2x + 5)(x + 2)$

2 $(3x + 1)(2x - 4)$

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

Self preparing exercise [here](#). Unlimited maths [here](#)

FACTORISATION

To 'factorise' means to _____

Example

Factorise $15x + 25$

Factorise

1 $36x + 12$

2 $18x + 24$

3 $10x^2 + 25x$

SUBSTITUTION

Always put negatives into _____ before typing into your calculator

1. If $H = g^3 + 3g$, find the value of H when $g = 2$
2. If $y = 2x - 3z$, find the value of y when $x = 2.7$ and $z = -3.1$
3. If $a = 3b + 2c$, find the value of a when $b = 5$ and $c = 2$.
4. If $a = 3b + 2c$, find the value of b when $a = 47$ and $c = 7$.
5. If $y = x^2 - 5x$, find the value of y when $x = -3$
6. If $p = q^3 - 3q$, find the value of p when $q = -2$

STRAIGHT LINES

Vertical & Horizontal lines

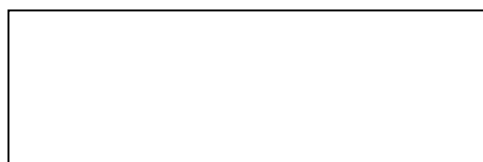
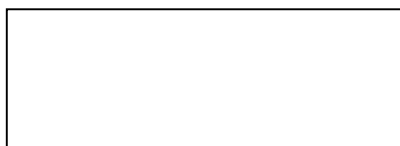
Vertical lines will have equations like:

Horizontal lines will have equations like:

Diagonal Lines

Diagonal lines will have equations like:

$$y = mx + c$$

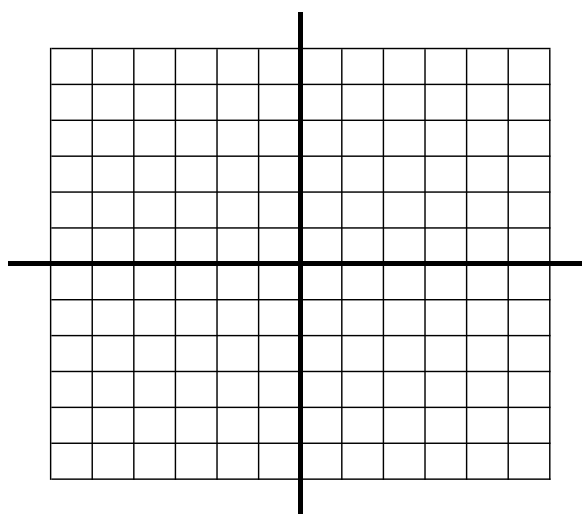


Examples

$$y = 3$$

$$x = 1$$

$$y = 2x - 1$$



straight lines worksheet [here](#)