

NICKS & TRICKS

1st year Guide to – Algebra Introduction

1. Some rules of Algebra

1. x is a number
2. x could be any number
3. x follows all the rules of every other number
4. You can only add “like” terms
e.g.
We can add: $3x + 2x = 5x$

But we can't add: $4a + 3b$
And we can't add: $5x^2 + 3x$
5. $5x$ means “5 multiplied by x ”
6. x is the same as $1x$

2. Algebraic Definitions

- **Term:** this is basically any part of an expression or equation that involves a letter e.g. $4m$ $-2r$ and p are all terms
- **Variable:** a letter that represents a number (usually x or y). This may change or be unknown
- **Constant:** a quantity that does not change in value, e.g. a number on its own
- **Coefficient:** a constant or number that is multiplying a variable

Worked Examples

Questions:

- If $c = 100$ and $d = 70$ what is the value of



$$c - d ?$$

$$100 - 70 = 30$$

30

20

70

- If $x = 5$ what is the value of

$$3x ?$$

Multiply

$$3(5) = 15$$

15

35

8

- If $p = 2$ and $q = 3$ what is the value of

$$pq ?$$

Multiply

$$(2)(3) = 6$$

23

5

6

2 Questions – Time yourself!

Question 1

Simplifying

$$3m \times 6n$$

$$7h \times 7h$$

$$2f \times 3g \times 5h$$

$$2a \times 2a \times b$$

Question 2

Multiply:

$$3(x + 2) + 5(2x + 3)$$

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

$$4(2p - 5) + 3(3p + 1)$$

$$5(m - 4) - 2(3m + 6)$$