

Substitution

Starter

1. (Review of previous material) Let $x = -5$ and $y = 3$. Find the value of:

(a) $7y - 3x$ (b) $-\frac{8x}{7y}$ (c) $2x^2 - 9y^2$

Notes

Substitution is when a **letter** is **replaced by a number** in a formula, equation etc.

When substituting negative numbers, put them in brackets.

The order of the calculation is given by BIDMAS:

Brackets
Indices (or powers)
Division *division and multiplication can be swapped around*
Multiplication
Addition *addition and subtraction can be swapped around*
Subtraction

E.g.1 Let $a = 4$, $b = -2$ and $c = -3$. Find the value of:

(a) $a(b + c)$ (b) $a^2(b - c)$ (c) $\frac{2c(a - c)}{b^2} + \frac{2c}{a}$
(d) $b^2(2a + 3c)$ (e) $\sqrt{ab + c^2}$ (f) $\frac{b^2}{a} + \frac{2c}{b}$

Working: (a) $a(b + c) = 4((-2) + (-3)) = 4 \times (-5) = -20$

Video: [Substitution](#)

[Solutions to Starter and E.g.s](#)

Exercise

9-1 class textbook: p97 M4.1 Qu 17-47 odd
A*-G class textbook: p89 M4.1 Qu 17-45 odd
9-1 homework book: p32 M4.1 Qu 1-39 odd
A*-G homework book: p24 M4.1 Qu 1-39 odd

Summary

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