

Substitution 2 (substituting negative numbers)

Starter

1. **(Review of last lesson)** Given that $h = \frac{m}{n} + m^2$, find h when $m = 6$ and $n = 2$.

2. **(Review of Y7 material)**

Find the value of: (a) $6 - 11$ (b) $-12 + 8$ (c) $-7 - 16$

3. **(Review of Y7 material)**

Evaluate: (a) -9×2 (b) $-42 \div -6$ (c) 7×-8

Notes

When substituting negative numbers **put brackets around the number** and be careful with signs when doing the arithmetic.

E.g. 1 If $a = 3$, $b = -2$, $c = 8$ and $d = -4$, evaluate:

(a) $a^2 + 2$ (b) b^3 (c) $4a(b - 5)$

(d) $3b^2 + d^3$ (e) $2a^2 - 5b$ (f) $2a^3 + 7$

Working: (a) $a^2 + 2 = 3^2 + 2$
 $= 9 + 2$
 $= 11$ (b) $b^3 = (-2)^3$
 $= (-2) \times (-2) \times (-2)$
 $= 4 \times (-2)$
 $= -8$

Video: [Substitution](#)

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

Exercise

p9 Ex 12.2 Qu 1ace..., 2ace..., 3ace..., 4-11

Summary

When substituting negative numbers **put brackets around the number** and be careful with signs when doing the arithmetic.

Textbook answers (only available during a lockdown)