GCSE HIGHER · REVISION MAT 1

Functions

1 $f(x) = 3x - 2$

Find $f(5)$.

2 $f(x) = x^2 + 1$

Find $f(-3)$.

3 $f(x) = 2x + 7$

Show that $f(4) = f(-1) + 10$.

4 $g(x) = 5x - 3$

Find x when $g(x) = 17$.

5 $f(x) = 2x + 1$ and $g(x) = x^2$

Find $fg(3)$ and $gf(3)$.

Explain why they are different.

6 $f(x) = \frac{x + 4}{3}$

Find $f^{-1}(x)$.

7 $f(x) = 3x - 1$ and $g(x) = x + 2$

Show that $fg(x) = 3x + 5$.

8 $f(x) = 2x - 3$ and $g(x) = x^2$

Solve $fg(x) = gf(x)$.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Functions

1 **13**

2 $9 + 1$

10

3 $f(4) = 15$, $f(-1) = 5$

$5 + 10 = 15$ ✓

4 $5x - 3 = 17$

$x = 4$

5 $fg(3) = f(9) = 19$

$gf(3) = g(7) = 49$

The order of the functions matters.

6 $y = \frac{x+4}{3} \Rightarrow x = 3y - 4$

$f^{-1}(x) = 3x - 4$

7 $fg(x) = 3(x + 2) - 1$

$= 3x + 5$

8 $2x^2 - 3 = (2x - 3)^2$

$2x^2 - 3 = 4x^2 - 12x + 9$

$x^2 - 6x + 6 = 0$

$x = 3 \pm \sqrt{3}$

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