GCSE HIGHER · REVISION MAT 3

Functions

1 $f(x) = 6x$

Find $f(0.5)$.

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

Find $f(4)$.

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

Show that $f(2) + f(3) \neq f(5)$.

4 $f(x) = x^2 - 6$

Find the values of x for which $f(x) = 30$.

5 $f(x) = 2x$ and $g(x) = x + 3$

Show that $fg(2) - gf(2) = 3$.

6 $f(x) = 5 - 2x$

Find $f^{-1}(x)$ and $f^{-1}(-7)$.

7 $f(x) = \dfrac{x + 1}{x - 1}$

Show that $ff(x) = x$.

8 $f(x) = 3x + k$ and $f^{-1}(10) = 2$.

Find k and $ff(1)$.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Functions

1 **3**

2 $32 - 3$

29

3 $8 + 11 = 19$

$f(5) = 17 \neq 19$

4 $x^2 = 36$

$x = 6$ or $x = -6$

5 $fg(2) = f(5) = 10$

$gf(2) = g(4) = 7$

$10 - 7 = 3$

6 **$f^{-1}(x) = \frac{5 - x}{2}$**

$f^{-1}(-7) = 6$

7

$$ff(x) = \frac{\frac{x+1}{x-1} + 1}{\frac{x+1}{x-1} - 1}$$

$= \frac{2x}{2}$

$= x$

8 $f(2) = 10 \Rightarrow 6 + k = 10$

$k = 4$

$f(1) = 7$, $f(7) = 25$

$k = 4$, $ff(1) = 25$

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