GCSE HIGHER · REVISION MAT 5

Functions

1 $f(x) = 7 - x$

Find $f(10)$.

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

Find $h(-4)$.

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

Show that $f(3) > g(3)$ but $f(1) < g(1)$.

4 $f(x) = 3x - 4$

Solve $f(x) = f(2) + 6$.

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

Show that $gf(x) = x^2 + 2x + 1$.

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

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

Solve $f(x) = f^{-1}(x)$.

7 $f(x) = 2x - 1$ and $g(x) = \frac{1}{x}$

Find $gf(x)$.

Which value of x must be excluded?

8 $f(x) = x^2 + 1, x \geq 0$

Show that $fff(1) = 26$.

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

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Functions

1 -3

2 $(-3)^2$

9

3 $f(3) = 9 > 6$

$f(1) = 1 < 2$

4 $f(2) = 2$

$3x - 4 = 8$

$x = 4$

5 $gf(x) = (x + 1)^2$

$= x^2 + 2x + 1$

6 $f^{-1}(x) = 4x - 12$

$\frac{x}{4} + 3 = 4x - 12$

$x = 4$

7 $gf(x) = \frac{1}{2x - 1}$

$x = \frac{1}{2}$

8 $f(1) = 2$, $f(2) = 5$, $f(5) = 26$

$f^{-1}(x) = \sqrt{x - 1}$

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