

HARDER INVERSE FUNCTIONS

1) Given that

$$f(x) = x^2 + 4x - 9 \quad \text{where } x \geq -2$$

- Write down the range of $f^{-1}(x)$.
- Express the inverse function in the form $f^{-1}(x)$.

2) Given that

$$g(x) = x^2 - 6x + 8 \quad \text{where } x \geq 3$$

- Write down the range of $g^{-1}(x)$.
- Express the inverse function in the form $g^{-1}(x)$.

3) Given that

$$f(x) = x^2 + 2x - 3 \quad \text{where } x \geq -1$$

- Write down the range of $f^{-1}(x)$.
- Express the inverse function in the form $f^{-1}(x)$.

4) Given that

$$h(x) = x^2 - 8x + 10 \quad \text{where } x \leq 4$$

- Write down the range of $h^{-1}(x)$.
- Express the inverse function in the form $h^{-1} : x \rightarrow \dots$.
- State the range of values of x that cannot be included in the domain of h^{-1} .

5) Given that

$$f(x) = 2x^2 + 4x - 5 \quad \text{where } x \geq -1$$

- Write down the range of $f^{-1}(x)$.
- Express the inverse function in the form $f^{-1} : x \rightarrow \dots$.
- State the range of values of x that cannot be included in the domain of $f^{-1}(x)$.

6) Given that

$$g(x) = 3x^2 - 6x + 1 \quad \text{where } x \leq 1$$

- Write down the range of $g^{-1}(x)$.
- Express the inverse function in the form $g^{-1}(x)$.

7) Given that

$$f(x) = x^2 + 6x + 5 \quad \text{where } x \geq -3$$

$$\text{Solve } f^{-1}(x) = 4$$

8) Given that

$$f(x) = 2x^2 + 12x - 6 \quad \text{where } x \geq -3$$

$$\text{Solve } f^{-1}(x) = 2$$