Find inverse functions

Maths

Mrs Dennett

Find inverse functions

1. Given $f(x) = 3x$, find $f^{-1}(x)$.

2. Given $g(x) = 7x - 6$, find $g^{-1}(x)$.

3. Given $h(x) = \frac{3x-5}{7}$, find $h^{-1}(x)$.

4. Given $f(x) = x^2 + 6$, find $f^{-1}(x)$.

5. $f(x) = \frac{x}{5} - 7$. Gabrielle is working out $f^{-1}(x)$. Her answer is shown below.

$$f^{-1}(x) = 5x + 7$$

What mistake has she made?

6. Given $h(x) = 8x + 6$, calculate the value of $h^{-1}(30)$.

Answers

Find inverse functions

1. Given $f(x) = 3x$, find $f^{-1}(x)$.

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

2. Given $g(x) = 7x - 6$, find $g^{-1}(x)$.

$g^{-1}(x) = \frac{x + 6}{7}$

3. Given $h(x) = \frac{3x - 5}{7}$, find $h^{-1}(x)$.

$h^{-1}(x) = \frac{7x + 5}{3}$

4. Given $f(x) = x^2 + 6$, find $f^{-1}(x)$.

$f^{-1}(x) = \sqrt{x - 6}$

5. $f(x) = \frac{x}{5} - 7$. Gabrielle is working out $f^{-1}(x)$. Her answer is shown below.

$f^{-1}(x) = 5x + 7$

What mistake has she made?

$(x + 7)$ is multiplied by 5, not just the x

The correct answer is $f^{-1}(x) = 5(x + 7)$

6. Given $h(x) = 8x + 6$, calculate the value of $h^{-1}(30)$. $h^{-1}(30) = 3$