

In exercises 1-4, **(a) Determine an equation for $f^{-1}(x)$**
 (b) Identify the domain of f and $f^{-1}(x)$

1. $f(x) = -x + 1$

2. $f(x) = -3x^2 + 5, x \geq 0$

3. $f(x) = 5 + \sqrt{x-2}$

4. $f(x) = \frac{1}{x+1}$

In exercises 5, use composition to show that f and g are inverses of each other.

5. $f(x) = 2x - 6$ $g(x) = \frac{x}{2} + 3$

In exercises 6 & 7, determine if the function is one-to-one.

6. $y = x^3 - 1$

7. $y = |x|$

8. Without actually finding the inverse, find the domain of the inverse of $f(x) = \frac{1}{x^2}$

9. Nurses carefully track the height and weight of infants to ensure that they are healthy as they grow. The average height in inches of a girl in the first 3 years of life can be modeled by $h(a) = 3\sqrt{a} + 19$, where a is the age of the girl in months.

a) Find and interpret the inverse of $h(a)$.

b) Estimate the age of a girl whose height is $32\frac{1}{2}$ inches.