

Warm-Up:

$$f(x) = x^2 - 9; \quad g(x) = 4x - 7$$

1) Find $[f - g](x)$.

2) Find $[f \circ g](x)$.

Section 7-2: Inverse Functions and Relations

An inverse relation is the set of ordered pairs obtained when the domain and range of an original relation is switched.

Examples:

1) Find the inverse relation of the relation $\{(1, 3), (6, 3), (6, 0), (1, 0)\}$.

An inverse function also switches the domain and range.

The inverse of $f(x)$ is $f^{-1}(x)$.

Property of Inverse Functions:

Suppose f and f^{-1} are functions. If $f(a) = b$, then $f^{-1}(b) = a$.

Examples:

2) Find the inverse of $f(x) = \frac{-1}{2}x + 1$

Two functions $f(x)$ and $g(x)$ are inverses iff both of their compositions equal the variable x .

$$f(g(x)) = x \quad g(f(x)) = x$$

Examples:

3) Determine whether the following functions are inverses.

$$f(x) = \frac{3}{4}x - 6 \quad g(x) = \frac{4}{3}x + 8$$

Pick a number.

Subtract 8.

Multiply by 4.

Add 10.

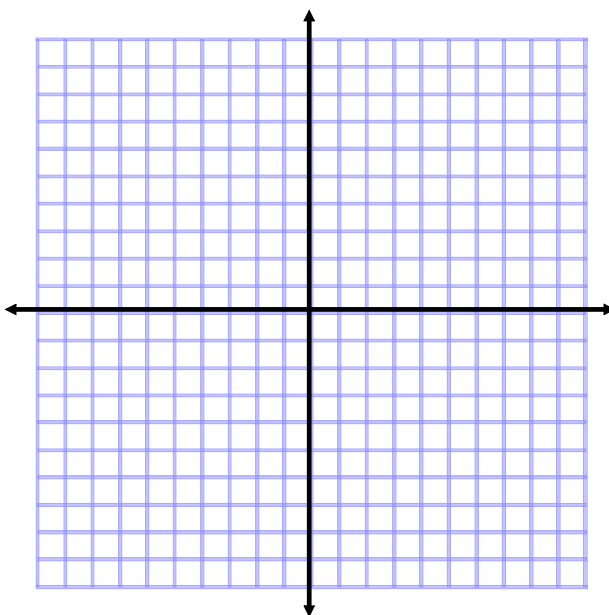
Divide by 2.

Give me your solution, I can guess your original number.

Section 7-3: Square Root Functions

Graph.

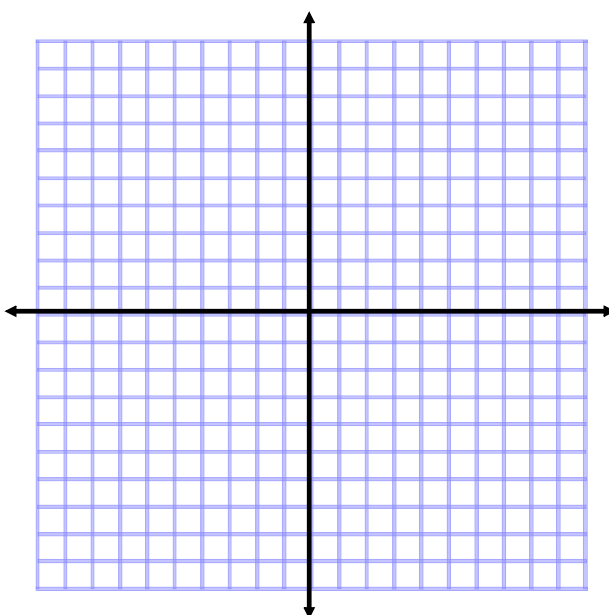
$$f(x) = \sqrt{x}$$



Section 7-3: Square Root Functions

Graph.

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



Homework: pg. 395-396 #10-34 even, 46 (Don't Graph This Section)
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Section 7-2, 7-3 Vocab