

Key

Function Inverses

Date _____ Period _____

State if the given functions are inverses.

1) $g(x) = 4 - \frac{3}{2}x$
 $f(x) = \frac{1}{2}x + \frac{3}{2}$

2) $g(n) = \frac{-12 - 2n}{3}$
 $f(n) = \frac{-5 + 6n}{5}$

3) $f(n) = \frac{-16 + n}{4}$
 $g(n) = 4n + 16$

4) $f(x) = -\frac{4}{7}x - \frac{16}{7}$
 $g(x) = \frac{3}{2}x - \frac{3}{2}$

5) $f(n) = -(n+1)^3$
 $g(n) = 3 + n^3$

6) $f(n) = 2(n-2)^3$
 $g(n) = \frac{4 + \sqrt[3]{4n}}{2}$

7) $f(x) = \frac{4}{-x-2} + 2$
 $h(x) = -\frac{1}{x+3}$

8) $g(x) = -\frac{2}{x} - 1$
 $f(x) = -\frac{2}{x+1}$

Find the inverse of each function.

9) $h(x) = \sqrt[3]{x} - 3$

$h^{-1}(x) = (x+3)^3$

10) $g(x) = \frac{1}{x} - 2$

$g^{-1}(x) = \frac{1}{x+2}$

11) $h(x) = 2x^3 + 3$

$h^{-1}(x) = \sqrt[3]{\frac{x-3}{2}}$

12) $g(x) = -4x + 1$

$g^{-1}(x) = \frac{x-1}{-4} = -\frac{1}{4}x + \frac{1}{4}$

13) $g(x) = \frac{7x+18}{7}$

$g^{-1}(x) = \frac{2x-18}{7}$

15)

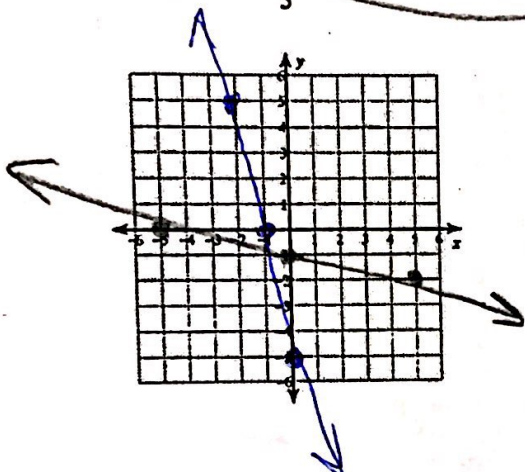
$f(x) = \frac{1}{2}(x-1)^2$

$y = \pm \sqrt{2x} + 1$

Find the inverse of each function. Then graph the function and its inverse.

17) $f(x) = -1 - \frac{1}{5}x$

$f^{-1} = -5x - 5$



14)

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

$f^{-1}(x) = (x-3)^2 + 2$
 $[3, \infty)$

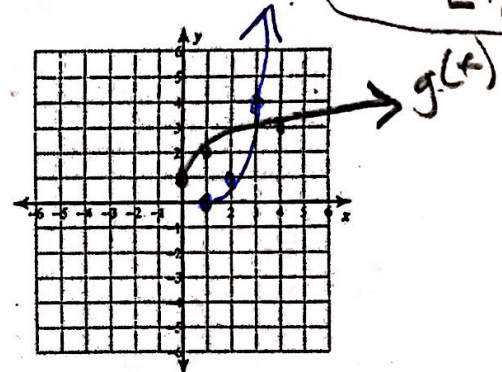
16)

$f(x) = x^2 + 6x - 3$

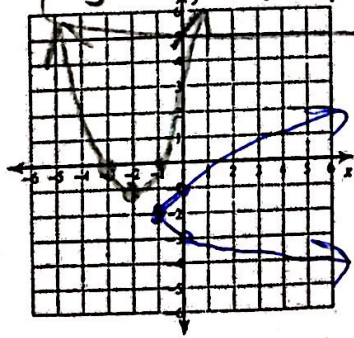
$y = \pm \sqrt{x+12} - 3$

18) $g(x) = \sqrt{x} + 1$

$g^{-1}(x) = (x-1)^2$
 $[1, \infty)$

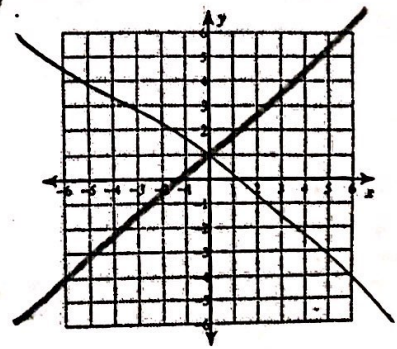


19) $f(x) = \frac{(x+2)^2 - 1}{3}$
 $y = \pm \sqrt{x+1} - 2$



20) $g(x) = \frac{-x-5}{3}$

$g^{-1} = -3x - 5$



21) $f(x) = 2x^2 - 12x + 1$

$y = \pm \sqrt{\frac{x+17}{2}} + 3$

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22) $f(x) = \frac{1}{2}x^2 + 8x + 6$

$y = \pm \sqrt{2(x+26)} - 8$

OR $= \pm \sqrt{2x+52} - 8$