Honors Math 3

Inverse Functions

State if the given functions are inverses.

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

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

3) $g(n) = -2n^3 - 1$
$f(n) = \sqrt[3]{n} - 1$

4) $g(x) = 5x - 5$
$f(x) = -3x - 7$

5) $f(x) = 1 + \frac{2}{5}x$
$g(x) = \frac{5}{2}x - \frac{5}{2}$

6) $f(n) = -\frac{1}{n-2}$
$g(n) = -\frac{1}{n} + 2$

Find the inverse of each function.

7) $f(x) = -5 + \frac{4}{5}x$

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

9) $f(n) = -\frac{4}{n-3}$

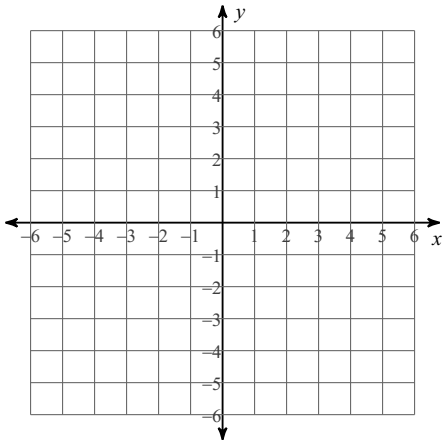
10) $g(n) = -5n - 20$

11) $f(x) = 2x + 3$

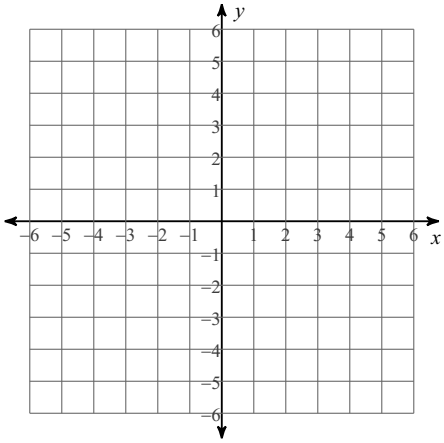
12) $f(x) = \sqrt[5]{-x+1}$

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

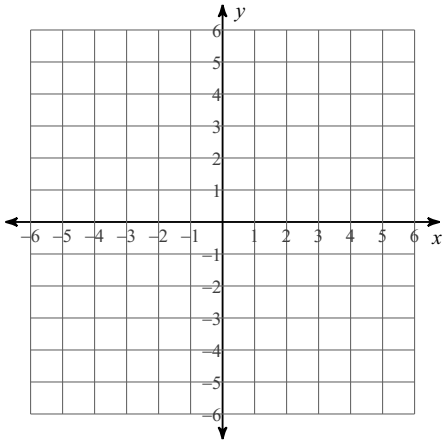
13) $g(x) = 4x + 12$



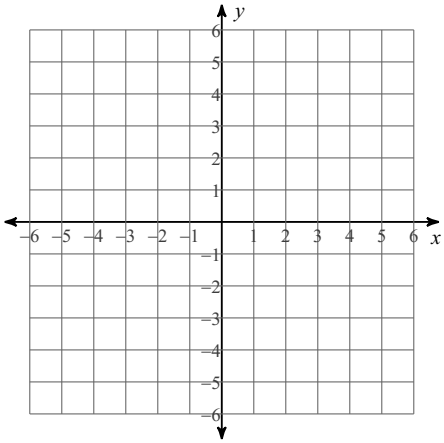
14) $f(x) = \dfrac{5x - 10}{2}$



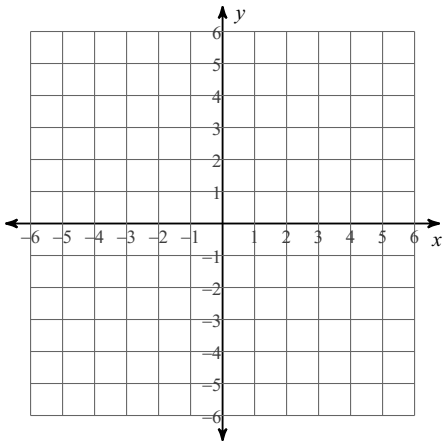
15) $g(x) = 3x$



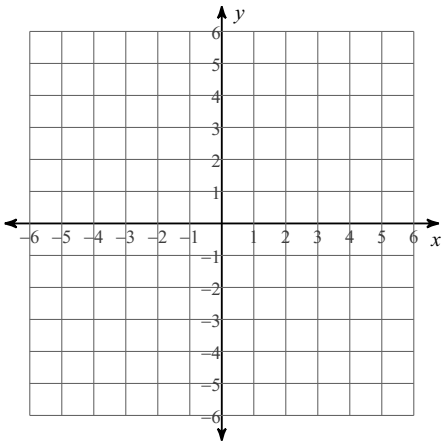
16) $f(n) = -n + 1$



17) $h(x) = \dfrac{12 + 3x}{4}$



18) $g(x) = -\dfrac{1}{4}x - \dfrac{3}{4}$



Inverse Functions

State if the given functions are inverses.

1) $f(n) = \frac{3}{n+1} - 2$

$g(n) = \frac{3}{n+2} - 1$

Yes

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

$f(n) = \frac{2}{n+1} - 2$

Yes

3) $g(n) = -2n^3 - 1$

$f(n) = \sqrt[3]{n} - 1$

No

4) $g(x) = 5x - 5$

$f(x) = -3x - 7$

No

5) $f(x) = 1 + \frac{2}{5}x$

$g(x) = \frac{5}{2}x - \frac{5}{2}$

Yes

6) $f(n) = -\frac{1}{n-2}$

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

Yes

Find the inverse of each function.

7) $f(x) = -5 + \frac{4}{5}x$

$f^{-1}(x) = \frac{5}{4}x + \frac{25}{4}$

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

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

9) $f(n) = -\frac{4}{n-3}$

$f^{-1}(n) = -\frac{4}{n} + 3$

10) $g(n) = -5n - 20$

$g^{-1}(n) = -4 - \frac{1}{5}n$

11) $f(x) = 2x + 3$

$f^{-1}(x) = \frac{x-3}{2}$

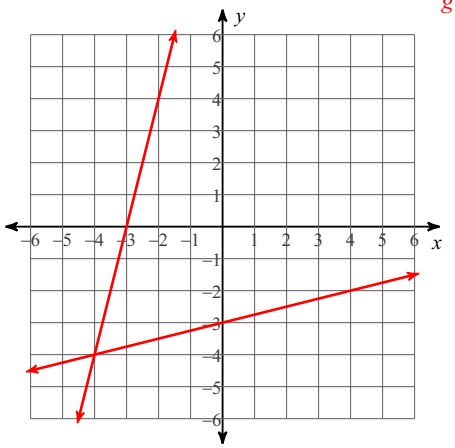
12) $f(x) = \sqrt[5]{-x+1}$

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

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

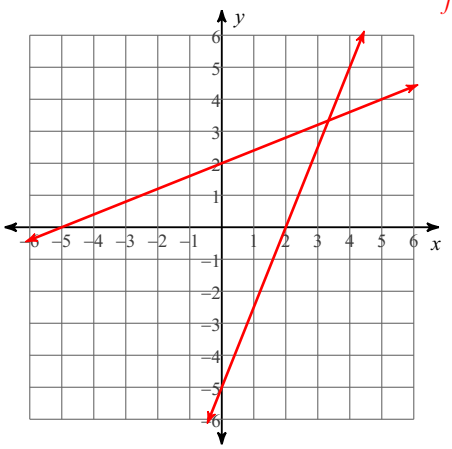
13) $g(x) = 4x + 12$

$g^{-1}(x) = \frac{-12 + x}{4}$



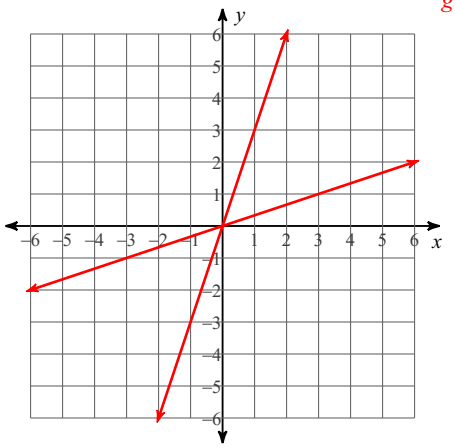
14) $f(x) = \frac{5x - 10}{2}$

$f^{-1}(x) = \frac{10 + 2x}{5}$



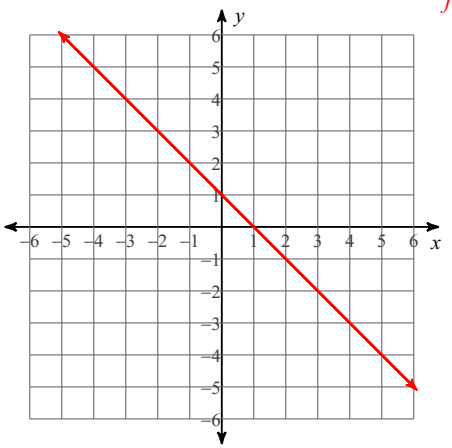
15) $g(x) = 3x$

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



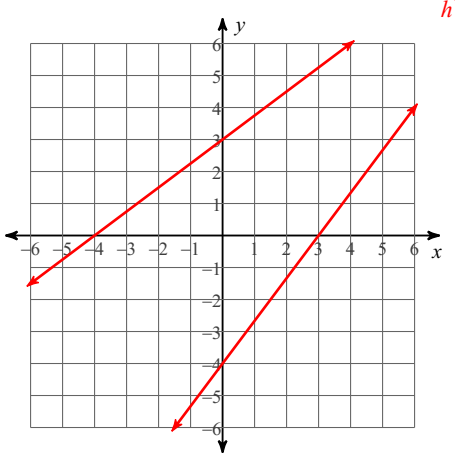
16) $f(n) = -n + 1$

$f^{-1}(n) = -n + 1$



17) $h(x) = \frac{12 + 3x}{4}$

$h^{-1}(x) = \frac{4x - 12}{3}$



18) $g(x) = -\frac{1}{4}x - \frac{3}{4}$

$g^{-1}(x) = -4x - 3$