

6.6-6.8 Review

Period _____

Perform the indicated operation.

1) $f(a) = a + 1$
 $g(a) = 2a - 5$
Find $(f + g)(a)$

2) $h(t) = 4t - 4$
 $g(t) = -3t^2 - 4$
Find $(h \cdot g)(t)$

3) $g(x) = 3x - 3$
 $f(x) = -3x^2 - 4$
Find $\left(\frac{g}{f}\right)(x)$

4) $g(n) = n + 5$
 $h(n) = -n - 4$
Find $(g - h)(n)$

5) $f(t) = t + 4$
 $g(t) = t^2 + 5t$
Find $(f \cdot g)(t)$

6) $g(a) = 2a + 1$
 $h(a) = a^3 + 3a$
Find $(g \circ h)(a)$

7) $f(x) = 2x - 4$
 $g(x) = 2x$
Find $(f \circ g)(x)$

8) $g(x) = 3x - 5$
 $f(x) = -3x - 3$
Find $(g \circ f)(x)$

9) $g(a) = 4a$
 $f(a) = a^3 + a$
Find $(g \circ f)(a)$

10) $g(x) = 4x - 1$
Find $(g \circ g)(x)$

11) $g(a) = a^2 + 3a$
 $f(a) = 4a - 4$
Find $(g + f)(-5)$

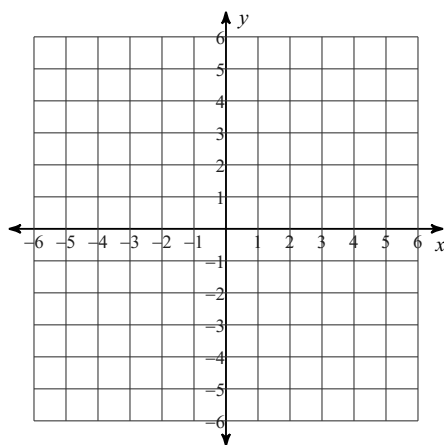
12) $h(x) = x^2 + 5$
 $g(x) = x + 3$
Find $(h + g)(1)$

13) $f(n) = 3n + 1$
 $g(n) = 3n - 5$
Find $(f \circ g)(-7)$

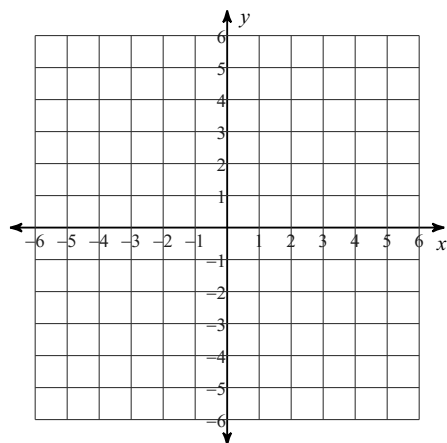
14) $h(x) = x^2 + 1$
 $g(x) = 2x - 1$
Find $(h \circ g)(-4)$

Graph the function and its inverse.

15) $g(x) = 2x - 3$



16) $f(x) = \sqrt[3]{x}$



Find the inverse of each function. State the domain and range for BOTH. Is the inverse a function?

17) $h(x) = 6x + 7$

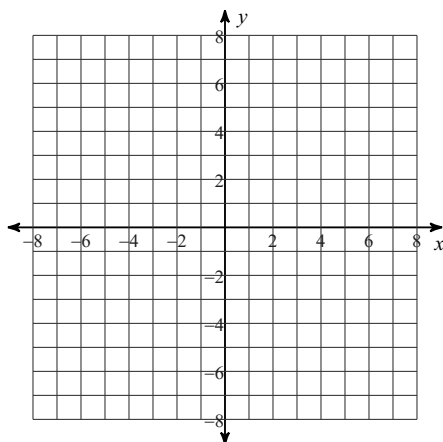
18) $g(x) = -\frac{4}{x} - 1$

19) $f(x) = (x - 1)^2 - 1$

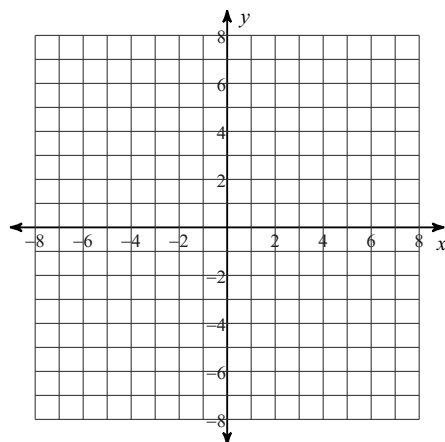
20) $f(x) = \sqrt{x + 1} + 6$

Sketch the graph of each function.

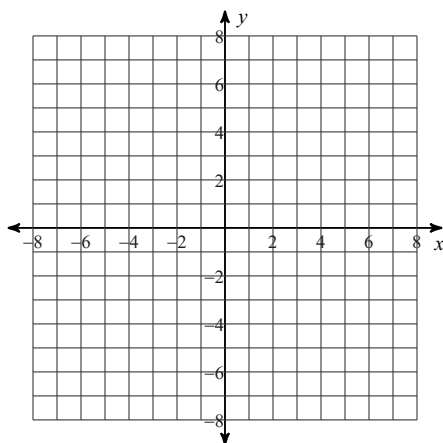
21) $y = \sqrt[3]{x} + 5$



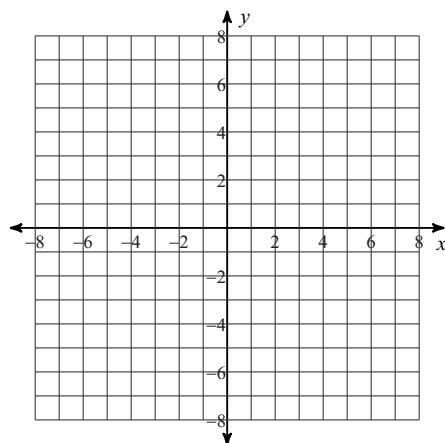
22) $y = \sqrt{x-4} + 3$



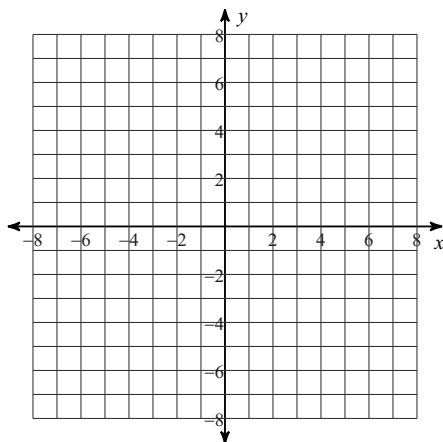
23) $y = 2\sqrt[3]{x+6} - 4$



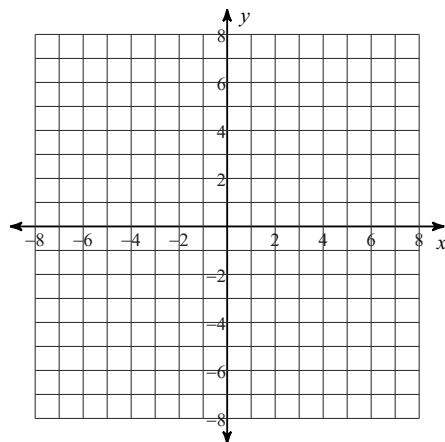
24) $y = \sqrt[3]{x+1}$



25) $y = 3\sqrt{x}$



26) $y = 2\sqrt{x-1} - 1$



Verify if the given functions are inverses. YOU MUST SHOW BOTH FUNCTION COMPOSITIONS.

$$27) \quad g(x) = \frac{-4x - 12}{5}$$
$$f(x) = \frac{-12 - 5x}{4}$$

$$28) \quad h(x) = \sqrt[3]{\frac{-x - 1}{2}}$$
$$f(x) = -1 - 2x^3$$

$$29) \quad h(x) = \sqrt[5]{x} - 2$$
$$f(x) = 2 + x^5$$

$$30) \quad f(x) = \sqrt[5]{\frac{x + 3}{2}}$$
$$g(x) = 2x^5 - 3$$