Purpose:

1. The given coordinates are on the graph of $f(x)$. Find the coordinates for $f^{-1}(x)$.

   (a) $(-2, 4)$

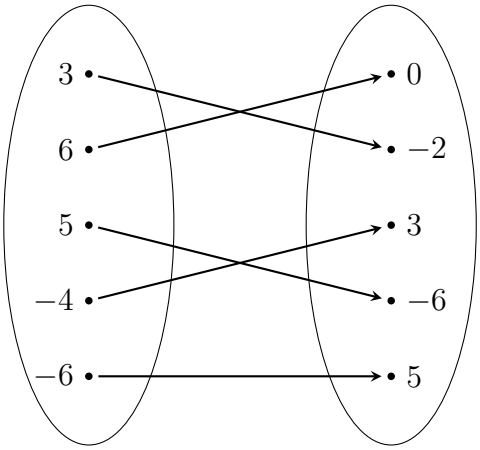
   (b) $(4, 7)$

   (c) $(0, 11)$

   (d) $(-3, -8)$

   (e) $(10, 10)$

2. The relation bubble below is a function. Draw the inverse mapping.



3. A function table for $f(x)$ is given below. For each function value or inverse function value below, either compute the value or explain why such a value cannot be computed with the information given.

x	-1	0	1	2	3
$f(x)$	2	4	-1	5	0

   (a) $f(0)$

   (b) $f^{-1}(4)$

   (c) $f^{-1}(3)$

4. For each pair of functions below, determine if the functions are inverses.

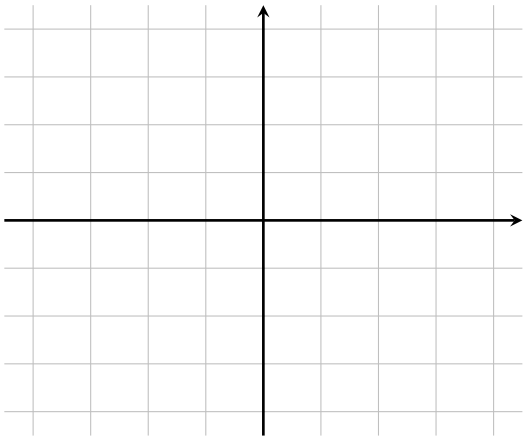
(a) $g(x) = 4 - \frac{3}{2}x$, $f(x) = \frac{1}{2}x + \frac{3}{2}$

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

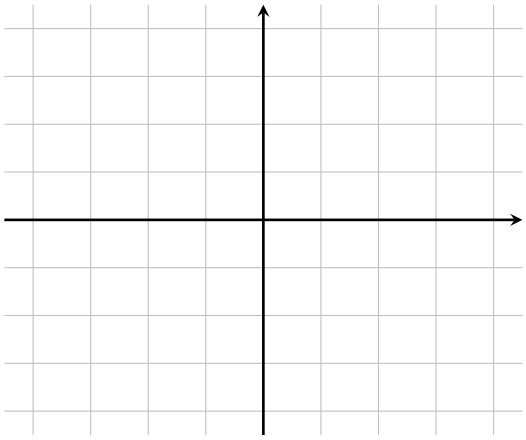
(c) $f(x) = 2(x-2)^3$, $g(x) = \frac{4 + \sqrt[3]{4x}}{2}$

5. For each function below, find the inverse then graph the function and the inverse. Remember to label your axes!

   (a) $f(x) = -2x^3 + 1$



   (b) $g(x) = \dfrac{-x - 5}{3}$



6. For each function below, find the inverse.

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

(b) $g(x) = \dfrac{1}{x} - 2$

(c) $f(x) = -x + 3$

Extra Practice: Now that you've gotten more comfortable with the idea of the inverse of a function, here is a collection of extra problems to practice on your own.

1. For each pair of functions below, determine if the functions are inverses.

   (a) $f(n) = \dfrac{-16+n}{4}$, $g(n) = 4n + 16$

   (b) $f(x) = \dfrac{4}{-x-2} + 2$, $h(x) = -\dfrac{1}{x+3}$

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

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

   (e) $g(x) = -\dfrac{2}{x} - 1$, $f(x) = -\dfrac{2}{x+1}$

2. For each function below, find the inverse then graph the function and the inverse.

   (a) $f(x) = -1 - \dfrac{1}{5}x$

   (b) $g(x) = \dfrac{1}{x-1}$

3. For each function below, find the inverse.

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

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

   (c) $g(x) = \dfrac{7x+18}{2}$

   (d) $f(x) = x + 3$

   (e) $f(x) = 4x$