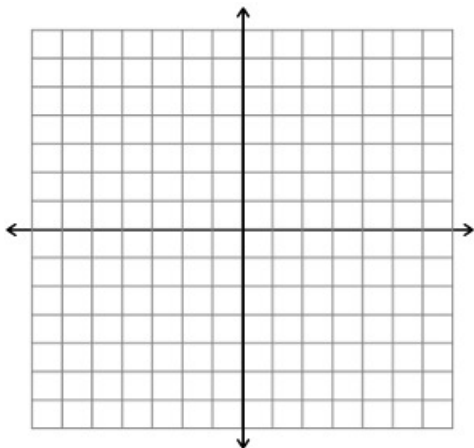


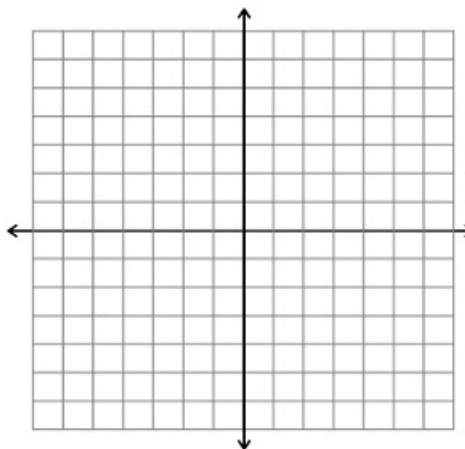
Worksheet 50 - Function Transformations

1. Sketch the graphs by hand:

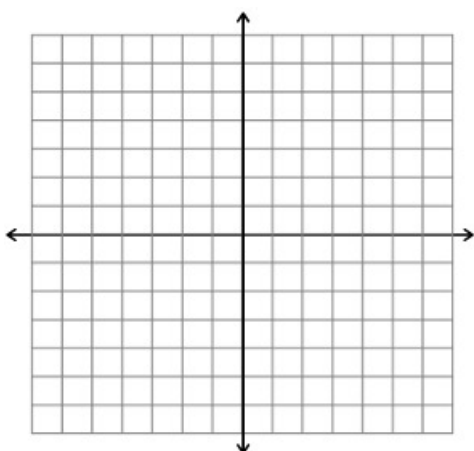
(a) $f(x) = |x - 4| + 2$



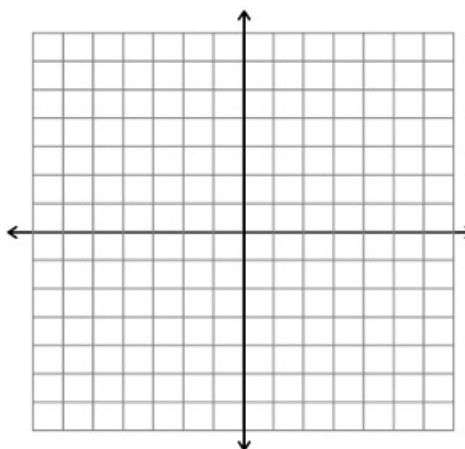
(d) $k(x) = \frac{1}{x - 2} - 1$



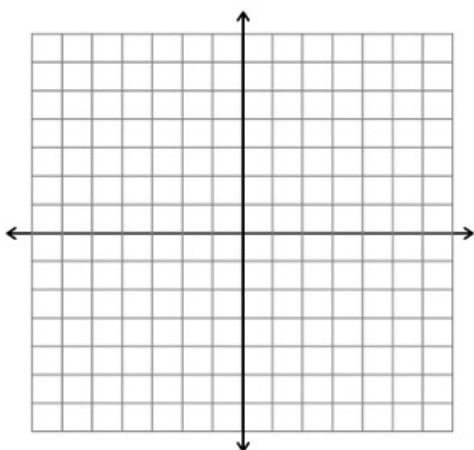
(b) $g(x) = \frac{1}{2}(x + 3)^2$



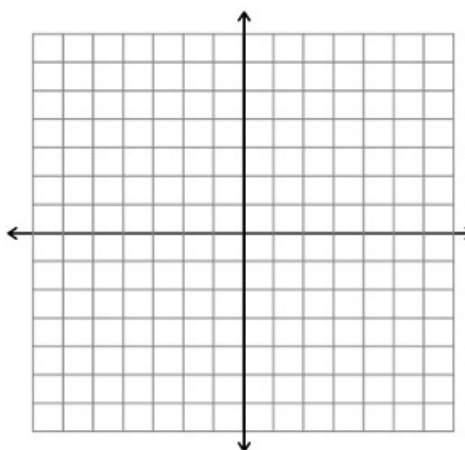
(e) $j(x) = \sqrt[3]{-x + 2}$



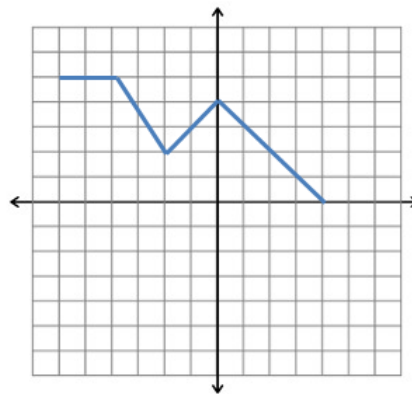
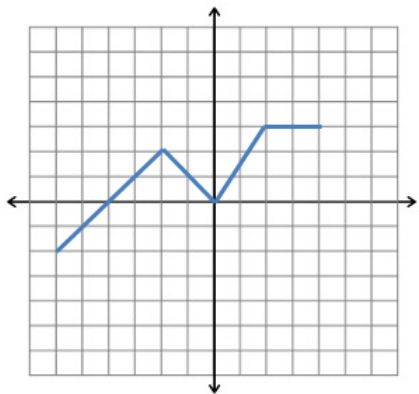
(c) $h(x) = -\frac{1}{2}x^3$



(f) $m(x) = -2e^{-x}$

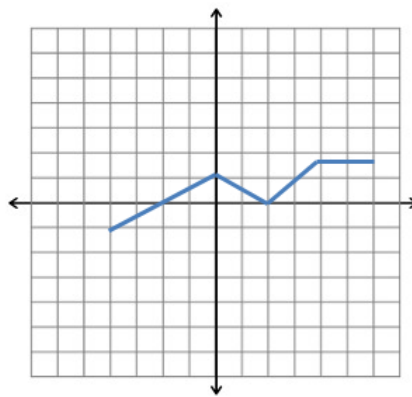
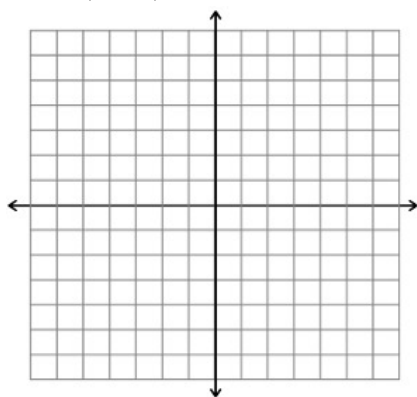


2. The graph of f is given. For each part, either sketch the graph or give the function as a transformation of f .



(b)

(a) $1 + 2f(x + 1)$



(c)

3. Find the inverse function:

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

(b) $g(x) = \frac{2}{3x - 1}$

(c) $h(x) = \frac{1}{8}(x - 2)^3$

4. If $(-10, 5)$ is a point on the graph of an invertible function f , then what point must be on the graph of:

(a) $-\frac{1}{5}f(x-3)$

(b) $f(5x+15)-2$

(c) $f^{-1}\left(-\frac{1}{5}x\right)$

(d) $2f^{-1}(x-1)+1$

5. Let the domain of $g(x)$ be $[-1, 2]$ and the range be $[0, 3]$. Find the domain and range of the following:

(a) $3f\left(\frac{1}{4}x\right)$

(b) $f(x-3)+1$

(c) $\frac{1}{3}f(x+3)$

6. If r is an x -intercept of the graph of $y = h(x)$, then what statement can be made about an x -intercept of the graph of each function?

(a) $y = -h(x)$

(b) $y = h(-x)$

(c) $y = -h(-x)$