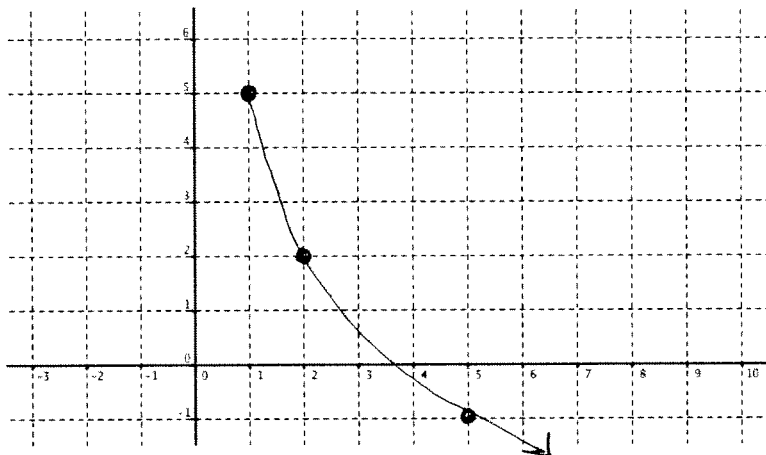
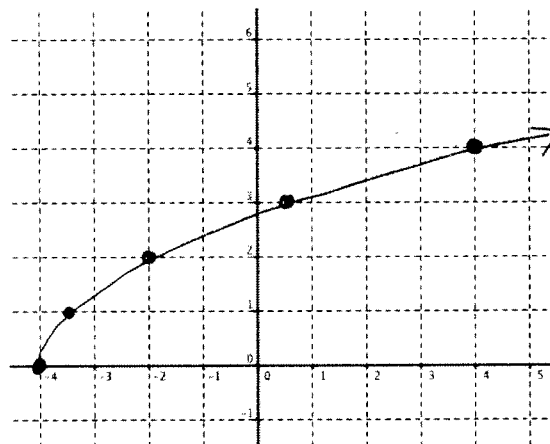


1. Graph the following functions by applying transformations to the base graph $f(x) = \sqrt{x}$.

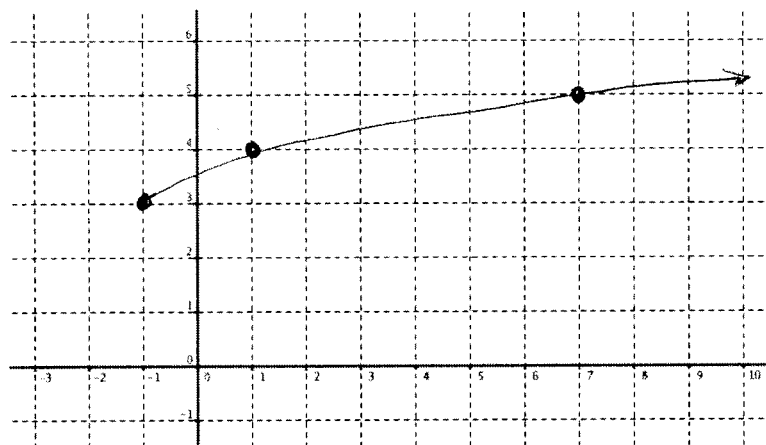
$$g(x) = -3\sqrt{x-1} + 5$$



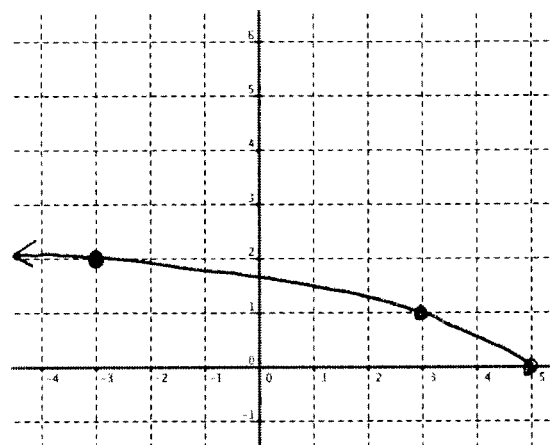
$$h(x) = \sqrt{2(x+4)}$$



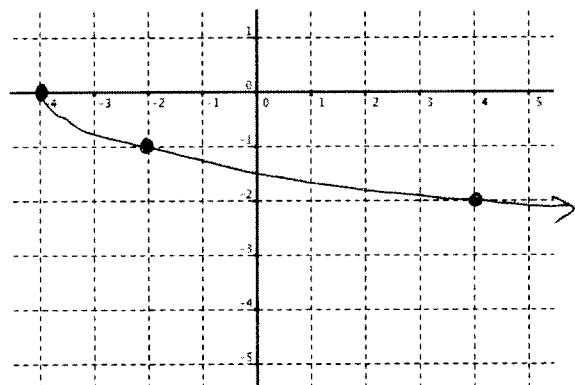
$$m(x) = \sqrt{\frac{x+1}{2}} + 3 = \sqrt{\frac{1}{2}(x+1)} + 3$$



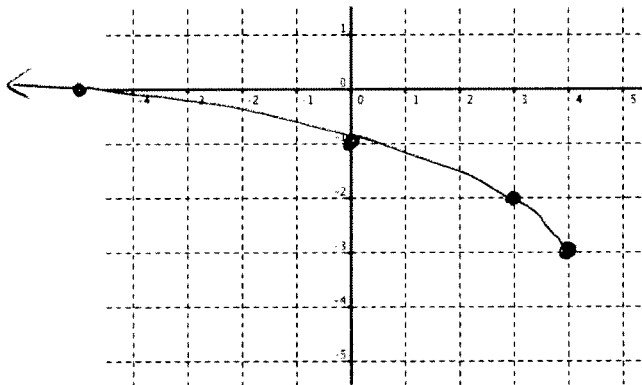
$$n(x) = \sqrt{-\frac{1}{2}(x-5)}$$



$$p(x) = -\sqrt{2x+8} = -\sqrt{2(x+4)}$$



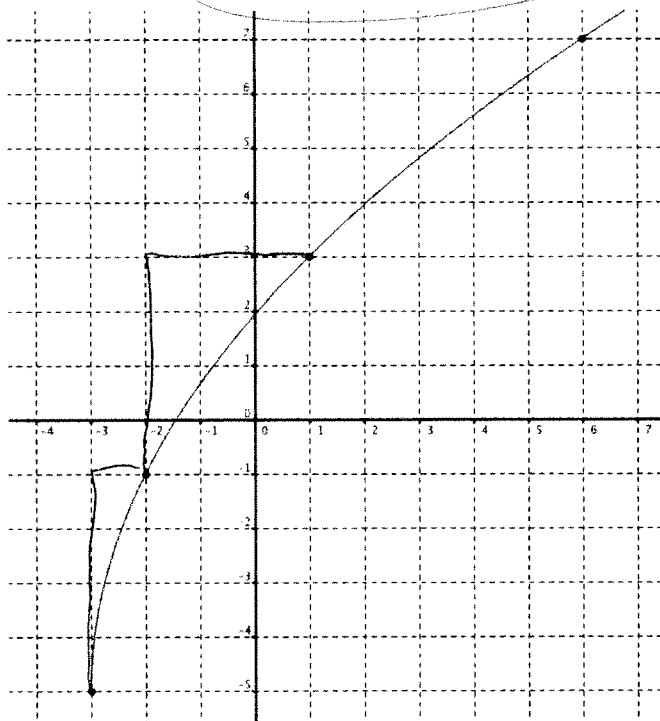
$$q(x) = \sqrt{4-x} - 3 = \sqrt{-(x-4)} - 3$$



2. Write an equation for each of the functions below, transformed from the base graph $f(x) = \sqrt{x}$.

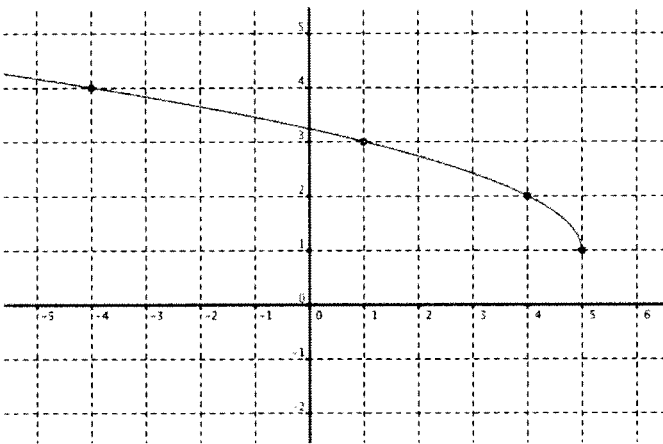
a)

$$y = 4\sqrt{x+3} - 5$$



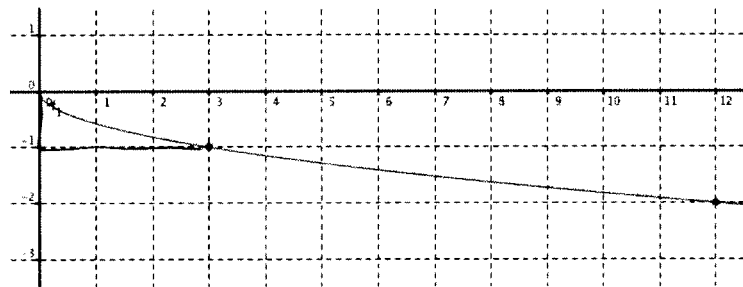
b)

$$y = \sqrt{-(x+5)} + 1$$



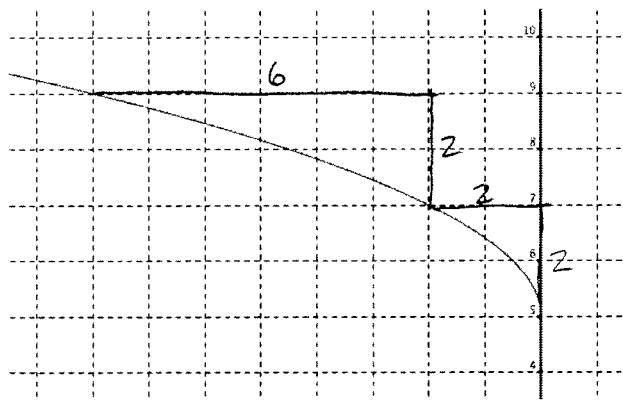
c)

$$y = \sqrt{\frac{1}{3}x}$$



d)

$$y = 2\sqrt{-\frac{1}{2}x} + 5$$



3. Determine an equation for the inverse of each function.

a) $g(x) = 3x + 6$

$$x = 3y + 6$$

$$\frac{x-6}{3} = \frac{3y}{3}$$

$$y = \frac{x-6}{3}$$

c) $g(x) = 2(x-3)^2$

$$x = 2(y-3)^2$$

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

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

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

b) $h(x) = (x-4)^2 + 3$

$$x = (y-4)^2 + 3$$

$$x-3 = (y-4)^2$$

$$\pm\sqrt{x-3} = y-4$$

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

d) $h(x) = \frac{x+6}{3}$

$$x = \frac{y+6}{3}$$

$$3x = y+6$$

$$y = 3x-6$$