

## Section 2.3 Extra Practice

1. Solve each equation algebraically.

a)  $\sqrt{x+1} + 3 = 5$

b)  $\sqrt{4-3x} = 2$

c)  $\sqrt{0.5(3x-2)} + 2 = 1$

d)  $-3\sqrt{x+2} + 4 = 1$

2. What function(s) would you graph to help you solve each radical equation?

a)  $\sqrt{5x^2 + 11} = x + 5$

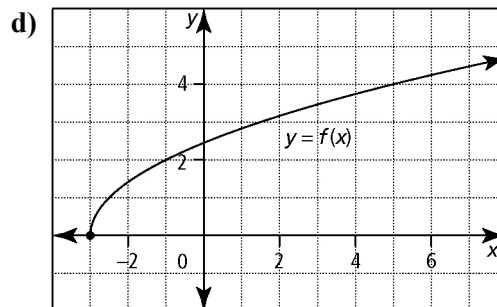
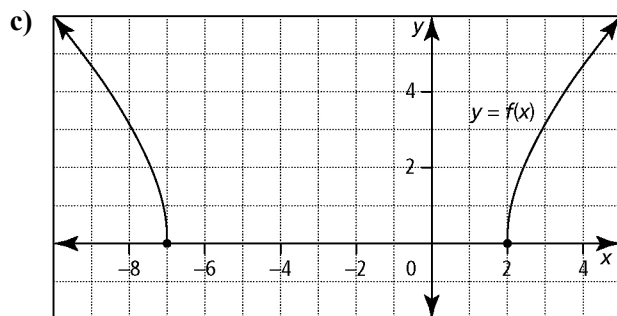
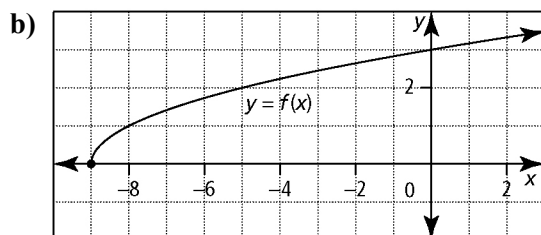
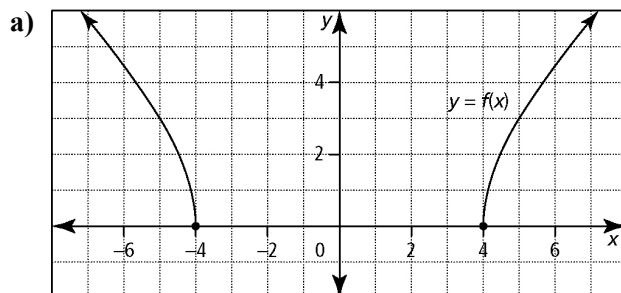
b)  $x + 3 = \sqrt{2x^2 - 7}$

c)  $\sqrt{13 - 4x^2} = 2 - x$

d)  $x + \sqrt{-2x^2 + 9} = 3$

3. Use each graph to solve the equation

$f(x) = 0$ .



4. Solve each equation graphically.

a)  $\sqrt{2x+1} = 3$

b)  $\sqrt{x-3} + 6 = 2$

c)  $\sqrt{4(x+3)} = 6$

d)  $2\sqrt{x-1} - 2 = 8$

5. Solve.

a)  $x - \sqrt{x+2} = 0$

b)  $\sqrt{x+4} + 8 = x$

c)  $\sqrt{x-1} + 3 - x = 0$

d)  $x = \sqrt{x+10} + 2$

6. Solve to the nearest tenth.

a)  $\sqrt{x-2} = x-3$

b)  $\sqrt{x+1} + 5 = 2x$

c)  $x\sqrt{3} + 4 = x$

d)  $\sqrt{x^2 - 4} = 2x - 10$



Name: \_\_\_\_\_

Date: \_\_\_\_\_

**BLM 2-5**

(continued)

7. Tanya says that the equation  $\sqrt{1-x} + 2 = 0$  has no solutions.
- a) Show that Tanya is correct, using both a graphical and an algebraic approach.
  - b) Is it possible to tell that this equation has no solutions simply by examining the equation? Explain.
8. The speed of a tsunami wave in the ocean is related to the depth of the water by the equation  $s = 3\sqrt{d}$ , where  $s$  is the speed of the wave, in metres per second, and  $d$  is the depth of the water, in metres. What is the depth of the water, to the nearest metre, if the speed of a tsunami wave is 10 m/s?
9. The radius,  $r$ , of a sphere is related to the surface area,  $A$ , by the equation  $r = \frac{1}{2}\sqrt{\frac{A}{\pi}}$ .
- a) The surface area of a baseball is about  $172 \text{ cm}^2$ . Find the radius of a baseball, to the nearest tenth of a centimetre.
  - b) The radius of a tennis ball is about 3.3 cm. Find the surface area, to the nearest square centimetre.
10. Solve.

$$\sqrt{x + \sqrt{x-2}} = 2$$

