Name: _____ Date: _____

BLM 2–4

Section 2.2 Extra Practice

1. Complete the table.

x	$f(x)$	$\sqrt{f(x)}$
–2	16	
–1	8	
0		2
1		1.4
2	1	

2. For each point given on the graph of $y = f(x)$, does a corresponding point on the graph of $y = \sqrt{f(x)}$ exist? If so, state the coordinates to the nearest hundredth.

a) (9, 14) **b)** (p, r)
c) (–2, 7) **d)** (–32, –1)

3. For each function, graph $y = \sqrt{f(x)}$.

a) $f(x) = x^2 - 9$
b) $f(x) = -x^2 + 9$
c) $f(x) = x^2 + 9$

4. a) Sketch the graph of $f(x) = x + 4$.
b) State the domain and range of $y = f(x)$.
c) Sketch the graph of $y = \sqrt{f(x)}$.
d) State the domain and range of $y = \sqrt{f(x)}$.

5. For each function, graph $y = \sqrt{f(x)}$ and state the domain and range of $y = \sqrt{f(x)}$.

a) $f(x) = x - 4$
b) $f(x) = x + 9$
c) $f(x) = x - 9$

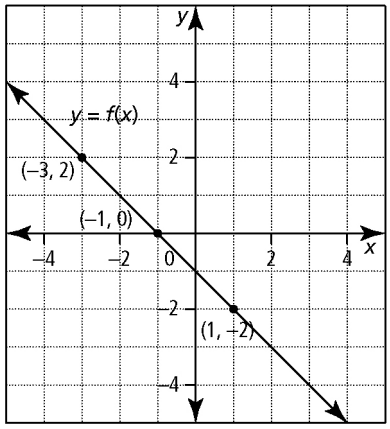
6. Determine the domains and ranges of each pair of functions. Explain why the domains and ranges differ.

a) $y = x + 5,\ y = \sqrt{x+5}$
b) $y = 3x - 9,\ y = \sqrt{3x-9}$
c) $y = -x - 10,\ y = \sqrt{-x-10}$

7. Identify the domain and range of $y = \sqrt{f(x)}$.

a) $f(x) = x^2 - 16$
b) $f(x) = x^2 + 5$
c) $f(x) = 2x^2 + 18$

8. Using the graph of $y = f(x)$, sketch the graph of $y = \sqrt{f(x)}$.



9. a) Sketch the graphs of $y = x^2 + x - 20$ and $y = \sqrt{x^2 + x - 20}$.
b) Why is the graph of $y = \sqrt{x^2 + x - 20}$ undefined over an interval?

10. a) Give examples of points on the graph of $y = f(x)$ that would be invariant when graphing $y = \sqrt{f(x)}$.
b) Give examples of points on the graph of $y = f(x)$ that would be undefined on the graph of $y = \sqrt{f(x)}$.

Name: _____ Date: _____

BLM 2–5

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

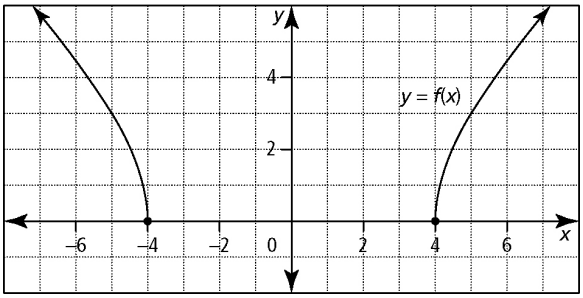
b) $x+3=\sqrt{2x^2-7}$

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

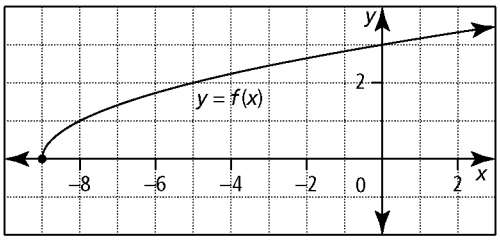
d) $x+\sqrt{-2x^2+9}=3$

3. Use each graph to solve the equation $f(x)=0$.

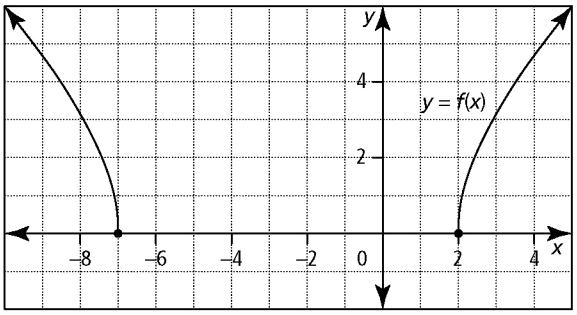
a)



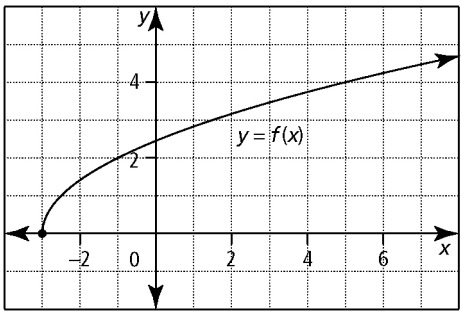
b)



c)



d)



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 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.

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