6.8 Practice Worksheet Graphing Radical Functions HW   Name: _____

Describe the transformation of each of the following square root functions from the parent function $y = \sqrt{x}$.

1. $y = \sqrt{x+4} + 3$

2. $y = \sqrt{x-1} - 8$

3. $y = -2\sqrt{x-3} + 5$

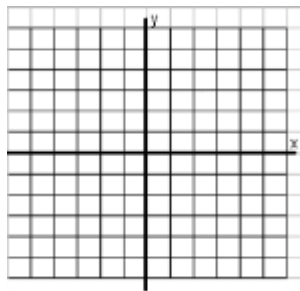4. $y = -\sqrt{x} - 9$

5. $y = 3\sqrt{x+5}$

6. $y = -\sqrt{x-8} + 1$

Graph the following square root functions. State the domain and range of each.

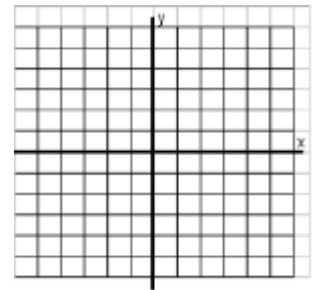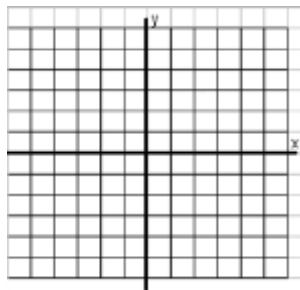7. $y = \sqrt{x+1} - 2$

D:

R:

8. $y = -\sqrt{x-2} - 3$

D:
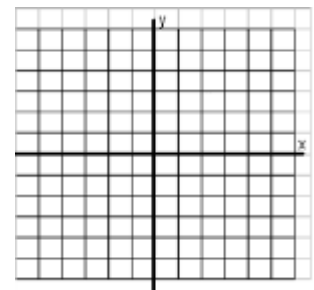
R:

9. $y = 4\sqrt{x-3} + 2$

D:

R:

10. $y = -2\sqrt{x} + 4$
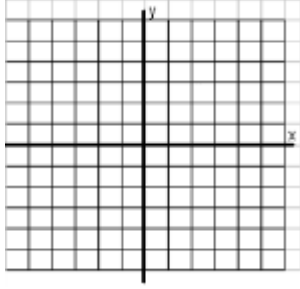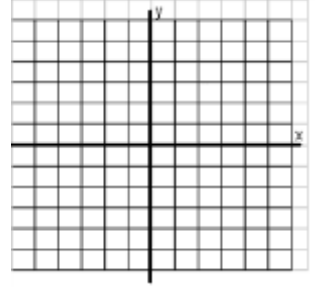
D:

R:

Describe the transformation of each of the following cube root functions from the parent function $y = \sqrt[3]{x}$. Graph each function.
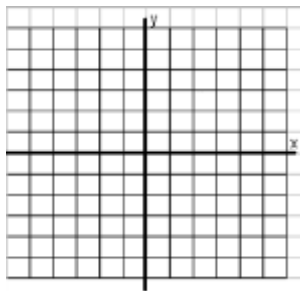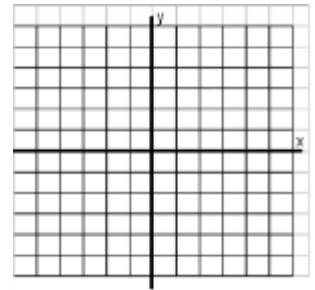
11. $y = \sqrt[3]{x-2} + 1$

12. $y = -\sqrt[3]{x+1} + 3$

13. $y = \sqrt[3]{x-3} - 4$

14. $y = -2\sqrt[3]{x} - 1$

15. What is the domain and range for all cube root functions? _____

Use your graphing calculator to find the solution to the following.

16. When you look at the ocean, the distance d (in miles) you can see to the horizon can be modeled by $d = 1.22\sqrt{a}$ where a is your altitude (in feet above sea level). Determine at what altitude you can see 10 miles.

17. To find the radius r of a sphere of volume V, use the equation $r = \sqrt[3]{\dfrac{3V}{4\pi}}$.   A balloon used for advertising special events has a volume of 225 ft^3. What is the radius of the balloon?

18. Write an equation for the function whose graph is shown.