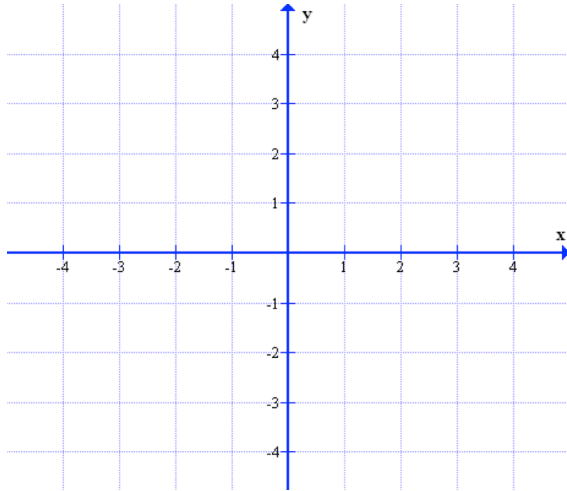


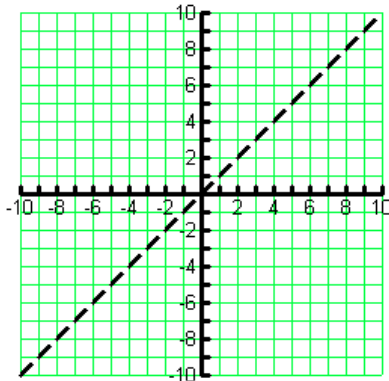
1. Graph  $y < \sqrt{x+1} - 4$



Are the following solutions?

- (0, -3)      (3, -5)      (7, 2)      (-1, -5)

3.



Sketch the graph of  $y = x^2 - 4$

Domain - \_\_\_\_\_

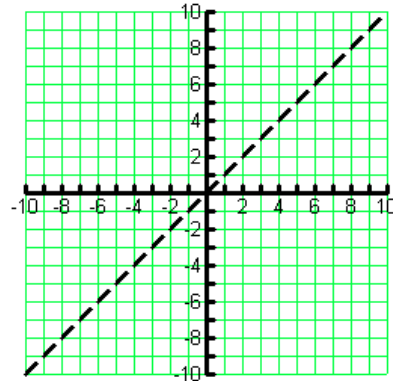
Range - \_\_\_\_\_

Find and sketch the inverse - \_\_\_\_\_

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

2.



Sketch the graph of  $f(x) = \sqrt{x+5} + 3$

Domain - \_\_\_\_\_

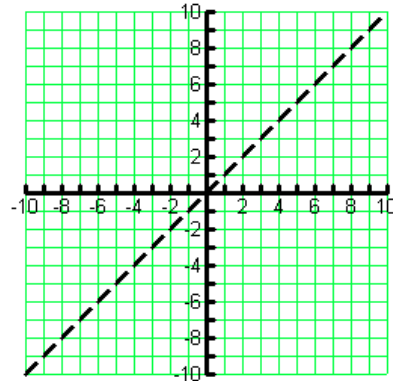
Range - \_\_\_\_\_

Find and sketch the inverse - \_\_\_\_\_

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

4.



Sketch the graph of  $y = \sqrt{x} + 2$

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

Find and sketch the inverse - \_\_\_\_\_

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

Given the following equations,  
find:

$f(g(x))$

$g(f(x))$

$f(g(x))$  and  $g(f(x))$

5.  $f(x) = 4x$   
 $g(x) = x^2 - x + 1$

6.  $f(x) = \sqrt{x-4}$   
 $g(x) = 2x^2 - 1$

7.

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

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

What would the new equation be if we shifted  
this graph 4 units left and 3 units down?

\_\_\_\_\_

9.

$$y = -\sqrt{(x+4)} - 1$$

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

What would the new equation be if we shifted  
this graph 2 unit left and 3 units up?

\_\_\_\_\_

8.

$$y = 2\sqrt{x-1} - 3$$

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

What would the new equation be if we shifted  
this graph 5 units right and 2 units down?

\_\_\_\_\_

10.

$$y = -2\sqrt{x} - 5$$

Domain - \_\_\_\_\_

Range - \_\_\_\_\_

What would the new equation be if we shifted  
this graph 4 units right and 3 units up?

\_\_\_\_\_

Solve the following radicals. Check your solution(s).

11.  $\sqrt{2x-7} + 4 = 1$

12.  $\sqrt{3x+4} - 6 = -2$

13.  $\sqrt[5]{6x+2} = 2$

14.  $5 = \sqrt[3]{(12x+5)}$

Solve the following inequalities.

15.  $12 - \sqrt{c+4} \leq 4$

16.  $\sqrt{2x-1} \geq \sqrt{6x+3}$

17.  $\sqrt{x+1} > 11$

18.  $9 - \sqrt{4x+4} \geq 3$

19. Helena drops a ball from 25 feet above a lake. The formula  $t = \frac{1}{4}\sqrt{25-h}$  describes the time  $t$  in seconds that the ball is  $h$  feet above the water. Where will the ball be after 2 seconds?

22. Find the perimeter of a triangle with sides of $3 + \sqrt{3}$ and $2 - \sqrt{3}$ and $4 + \sqrt{3}$	23. Simplify $(-5x^3)^4$
24. Simplify: $3x^{1/3} \cdot 2x^{1/5}$	25. Simplify: $(2x^3y)(x^2y^3)(x^7)$
26. Simplify $(\sqrt{3} + 5)(\sqrt{2} + 3)$	27. Simplify $(9 - \sqrt{12})^2$

31. Simplify $(2\sqrt{3} + 7)(6\sqrt{3} - 5)$	32. Simplify $16^{1/4}$
33. Simplify: $(-2x^9)^2$	34. Simplify: $\left(\frac{5}{y}\right)^{-3}$
35. Simplify: $5(x^2y^{23})^0 + 3$	36. Simplify $\sqrt{40x^6y^5}$
37. Simplify $(2\sqrt{3} + 7) + (6\sqrt{3} - 5)$	38. Simplify $(2\sqrt{3} + 7) - (6\sqrt{3} - 5)$

39. Write in radical form: $y^{4/5}$	40. Change $\sqrt[5]{2x^3}$ to rational exponent form:																
41. Match	42. Match																
<table border="0"> <tr> <td>_____ <math>(-3)^2</math></td> <td>A 1</td> </tr> <tr> <td>_____ <math>-3^2</math></td> <td>B 9</td> </tr> <tr> <td>_____ <math>(-3)^0</math></td> <td>C -1</td> </tr> <tr> <td>_____ <math>-3^0</math></td> <td>D -9</td> </tr> </table>	_____ $(-3)^2$	A 1	_____ $-3^2$	B 9	_____ $(-3)^0$	C -1	_____ $-3^0$	D -9	<table border="0"> <tr> <td>_____ <math>3x^{-4}</math></td> <td>A <math>\frac{x^4}{3}</math></td> </tr> <tr> <td>_____ <math>\frac{1}{(3x)^{-4}}</math></td> <td>B <math>81x^4</math></td> </tr> <tr> <td>_____ <math>(3x)^{-4}</math></td> <td>C <math>\frac{1}{81x^4}</math></td> </tr> <tr> <td>_____ <math>\frac{1}{3x^{-4}}</math></td> <td>D <math>\frac{3}{x^4}</math></td> </tr> </table>	_____ $3x^{-4}$	A $\frac{x^4}{3}$	_____ $\frac{1}{(3x)^{-4}}$	B $81x^4$	_____ $(3x)^{-4}$	C $\frac{1}{81x^4}$	_____ $\frac{1}{3x^{-4}}$	D $\frac{3}{x^4}$
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43. Given a rectangle with an area of  $12x^7y^3$  and a width of  $3x^4y^5$  find the length.

44. Simplify:  $\frac{9}{\sqrt{6}}$

45. Simplify:  $\frac{9}{3-\sqrt{6}}$