Review 1 Fall, 2019
MAC 1105 Broward College

Solve the radical equation, and check all proposed solutions.

1) $\sqrt{x + 3} = 8$

2) $\sqrt{6x + 55} = x$

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

Solve and check the equation.

4) $(x + 8)^{3/2} = 216$

5) $(5x + 1)^{1/2} = 5$

6) $(x^2 + 6x + 9)^{3/4} - 20 = 7$ 6) _____

A) {-12, 6} B) {27} C) {-12, 0, 6} D) {6}

Solve the absolute value equation or indicate that the equation has no solution.

7) $|x + 4| = 9$

8) $|2x + 4| = 6$

9) $|8x + 5| - 3 = -11$

Use graphs to find the set.

10) $(-10, 0) \cap [-2, 8]$

11) $(-7, 0) \cup [-3, 6]$

Solve the absolute value inequality. Other than $\emptyset$, use interval notation to express the solution set and graph the solution set on a number line.

12) $|x + 4| - 1 \leq 6$

13) $|x| > 5$

Determine whether the relation is a function.

14) {(3, -1), (3, 8), (5, -6), (7, 3), (11, -2)} 14) _____

A) Function B) Not a function

Determine whether the equation defines y as a function of x.

15) $x^2 + y^2 = 16$

16) $x + y^3 = 1$

Graph the given functions on the same rectangular coordinate system. Describe how the graph of g is related to the graph of f.

17) $f(x) = x$, $g(x) = x + 2$

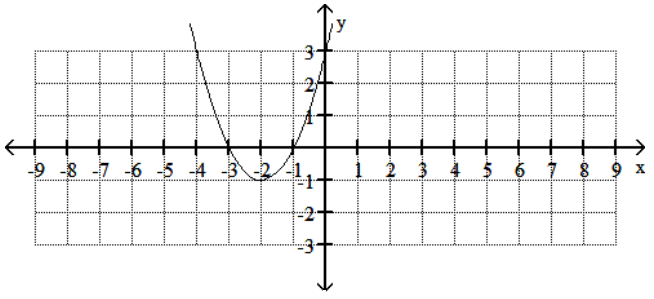
18) $f(x) = x^2$, $g(x) = x^2 + 3$

19) $f(x) = |x|$, $g(x) = |x| + 3$

20) $f(x) = \sqrt{x}$, $g(x) = \sqrt{x + 1}$

Use the graph to determine the function's domain and range.

21)



Determine whether the given function is even, odd, or neither.

22) $f(x) = x^5 - x^4$

23) $f(x) = 5x^2 + x^6$

Graph the function.

24) $f(x) = \begin{cases} x + 1 & \text{if } -8 \le x < 6 \\ -5 & \text{if } x = 6 \\ -x + 9 & \text{if } x > 6 \end{cases}$

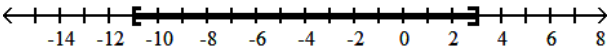
Begin by graphing the standard quadratic function $f(x) = x^2$. Then use transformations of this graph to graph the given function.

25) $h(x) = (x + 2)^2$

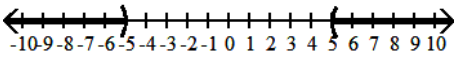
Begin by graphing the standard function $f(x) = x^3$ Then use transformations of this graph to graph the given function.

26) $h(x) = (x + 2)^3$

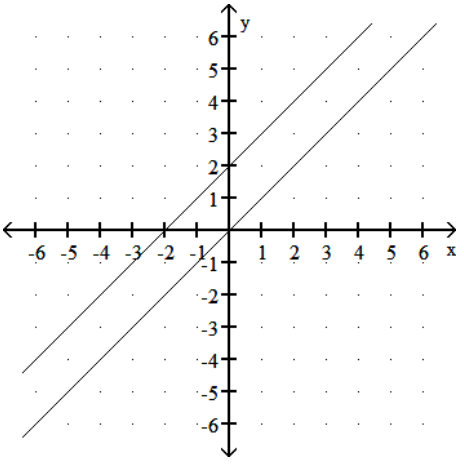
1) {61}
2) {11}
3) {9}
4) {28}
5) $\left\{\frac{24}{5}\right\}$
6) A
7) {-13, 5}
8) {1, - 5}
9) ∅
10) [-2, 0)
11) (-7, 6]
12) [-11, 3]



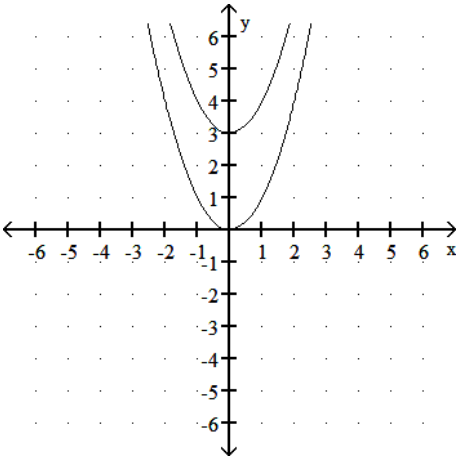
13) (-∞, -5) ∪ (5, ∞)



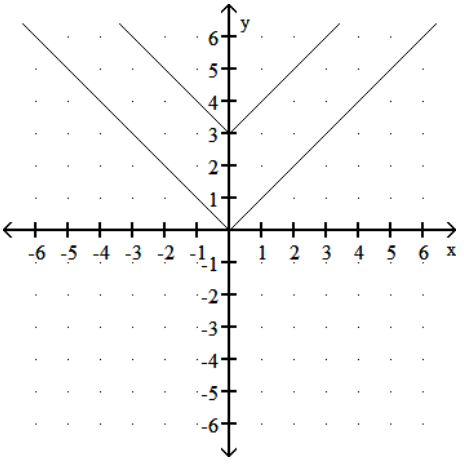
14) B
15) y is not a function of x
16) y is a function of x
17) g shifts the graph of f vertically up 2 units



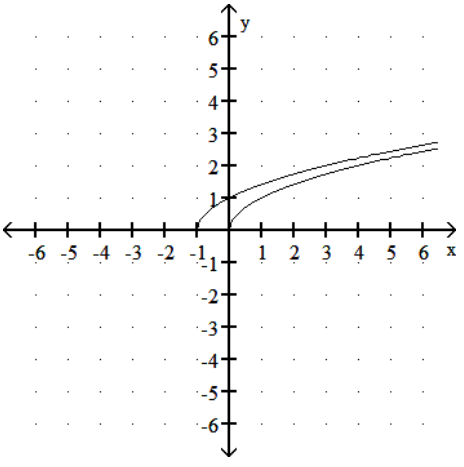
18) g shifts the graph of f vertically up 3 units



19) g shifts the graph of f vertically up 3 units



20) g shifts the graph of f 1 unit to the left

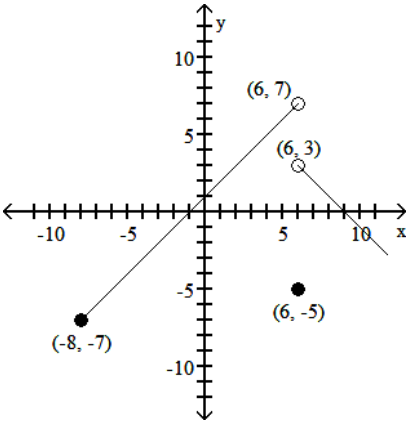


21) domain: $(-\infty, \infty)$
range: $[-1, \infty)$

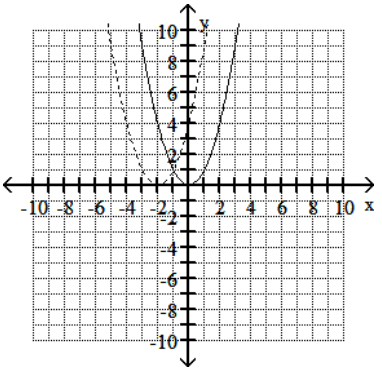
22) Neither

23) Even

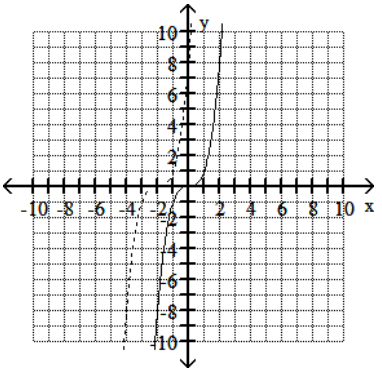
24)


y
x
10
5
-5
-10
-10
-5
5
10
(6, 7)
(6, 3)
(6, -5)
(-8, -7)

25)


y
x
10
8
6
4
2
-2
-4
-6
-8
-10
-10 -8 -6 -4 -2
2 4 6 8 10

26)


y
x
10
8
6
4
2
-2
-4
-6
-8
-10
-10 -8 -6 -4 -2
2 4 6 8 10