

The first two questions correspond to Practice 1:

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.

1)  $5 + \left| 1 - \frac{x}{2} \right| \geq 8$

2)  $|4x - 6| + 1 > -8$

Determine whether the relation is a function.

3)  $\{(-3, 2), (3, -1), (4, 7), (7, -5), (11, 4)\}$

A) Function

B) Not a function

3) \_\_\_\_\_

4)  $\{(-6, -3), (-2, 3), (-1, -8), (-1, 8)\}$

A) Function

B) Not a function

4) \_\_\_\_\_

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

5)  $x + y = 81$

A) y is a function of x

B) y is not a function of x

5) \_\_\_\_\_

6)  $x^2 + y = 4$

A) y is a function of x

B) y is not a function of x

6) \_\_\_\_\_

7)  $x + y^2 = 49$

A) y is a function of x

B) y is not a function of x

7) \_\_\_\_\_

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

8)  $f(x) = x^2, g(x) = x^2 + 4$

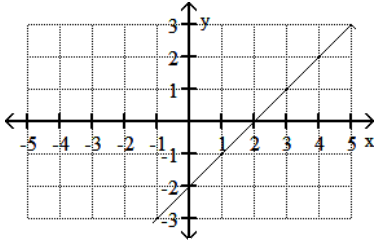
9)  $f(x) = |x|, g(x) = |x| - 2$

10)  $f(x) = x^3, g(x) = x^3 + 3$

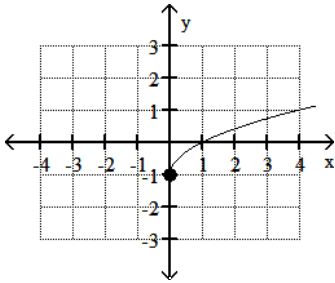
11)  $f(x) = \sqrt{x}, g(x) = \sqrt{x + 1}$

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

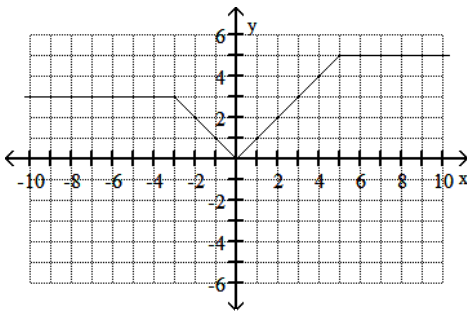
12)



13)



14)



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

15)  $f(x) = x^3 - 2x$

A) Neither

B) Odd

C) Even

15) \_\_\_\_\_

16)  $f(x) = 3x^2 + x^4$

A) Odd

B) Neither

C) Even

16) \_\_\_\_\_

17)  $f(x) = x^3 + x^2 - 5$

A) Even

B) Neither

C) Odd

17) \_\_\_\_\_

Evaluate the piecewise function at the given value of the independent variable.

18)  $f(x) = \begin{cases} x - 4 & \text{if } x > 1 \\ -(x - 4) & \text{if } x \leq 1 \end{cases}; f(-1)$

A) -1

B) 5

C) -5

D) -19

18) \_\_\_\_\_

Graph the function.

$$19) f(x) = \begin{cases} x - 3 & \text{if } x < 1 \\ -5 & \text{if } x \geq 1 \end{cases}$$

$$20) f(x) = \begin{cases} -x + 3 & \text{if } x < 2 \\ 2x - 3 & \text{if } x \geq 2 \end{cases}$$

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

$$21) h(x) = (x + 4)^2 - 5$$

Begin by graphing the standard square root function  $f(x) = \sqrt{x}$ . Then use transformations of this graph to graph the given function.

$$22) g(x) = \sqrt{x - 4} + 2$$

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

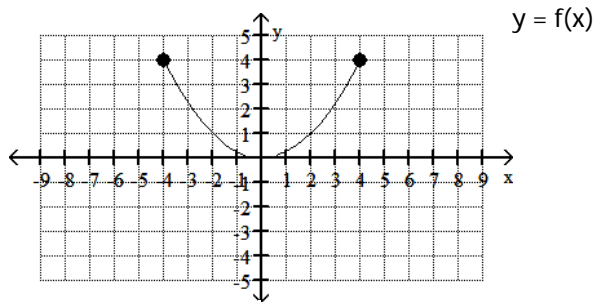
$$23) g(x) = \frac{1}{3}|x + 2| + 6$$

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

$$24) h(x) = (x - 3)^3 + 3$$

Use the graph of the function  $f$ , plotted with a solid line, to sketch the graph of the given function  $g$ .

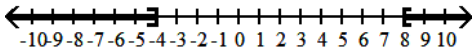
$$25) g(x) = -f(x + 1) + 2$$



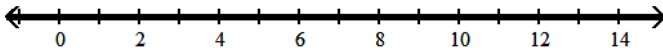
Answer Key

Testname: PRACTICE02

1)  $(-\infty, -4] \cup [8, \infty)$



2)  $(-\infty, \infty)$



3) A

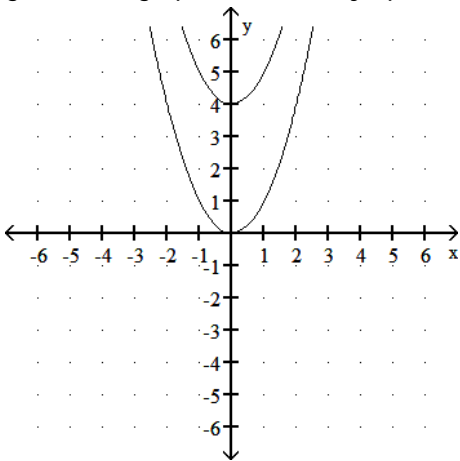
4) B

5) A

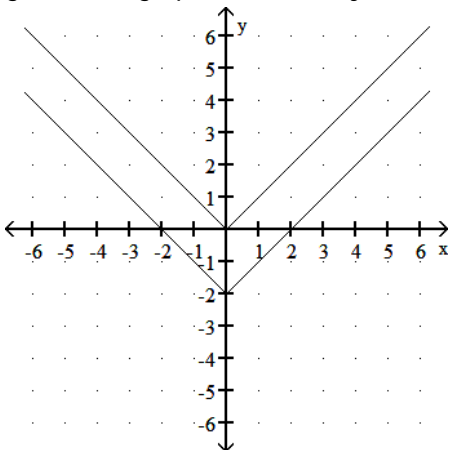
6) A

7) B

8) g shifts the graph of f vertically up 4 units



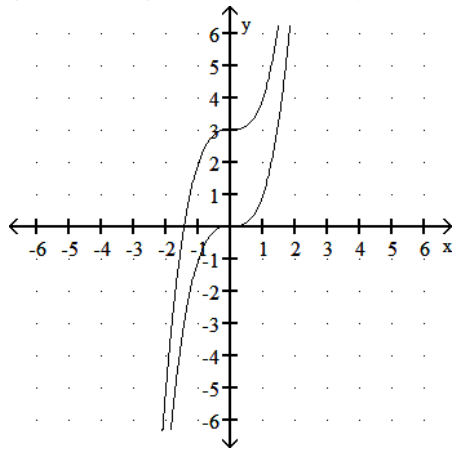
9) g shifts the graph of f vertically down 2 units



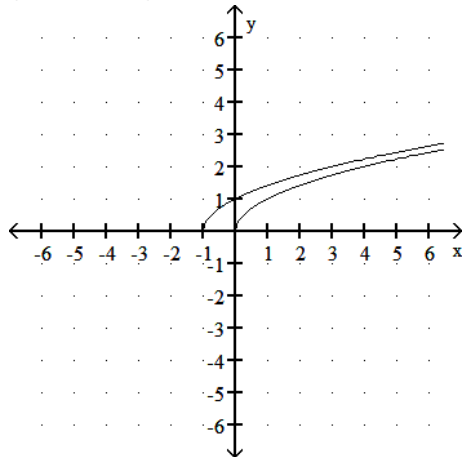
Answer Key

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



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



12) domain:  $(-\infty, \infty)$

range:  $(-\infty, 3]$

13) domain:  $[0, \infty)$

range:  $[-1, \infty)$

14) domain:  $(-\infty, \infty)$

range:  $[0, 5]$

15) B

16) C

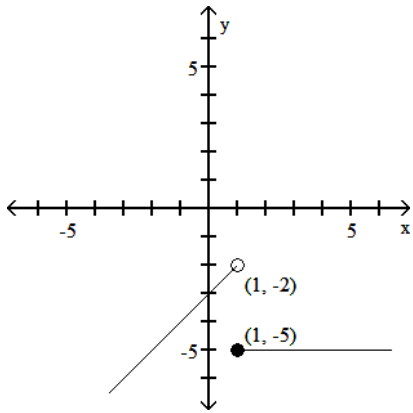
17) B

18) B

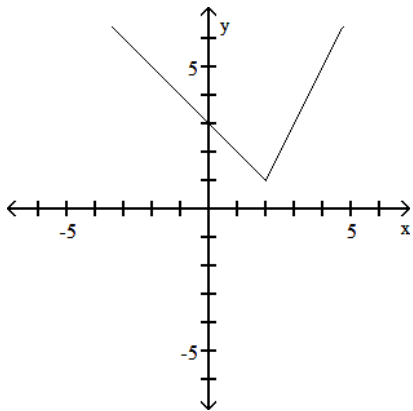
Answer Key

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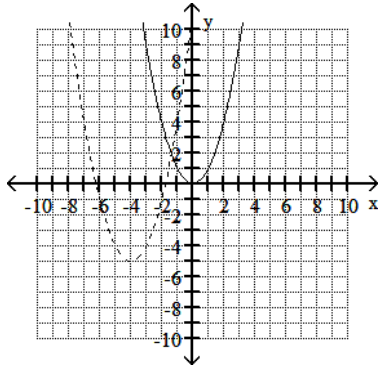
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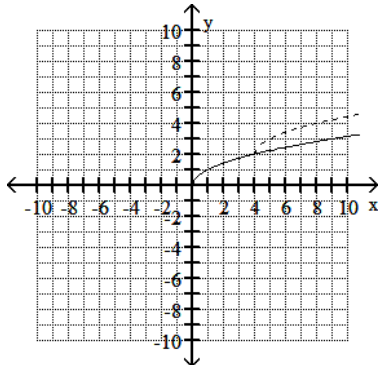
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21)



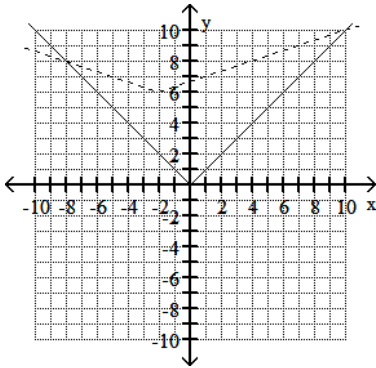
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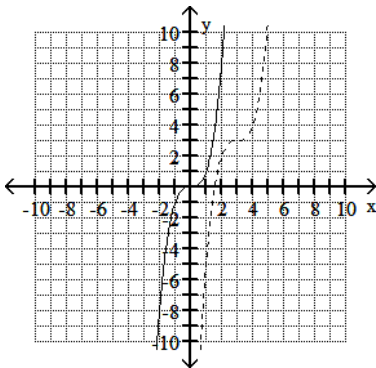
Answer Key

Testname: PRACTICE02

23)



24)



25)

