

Practice 02

Give the domain and range of the function.

- 1)  $f(x) = x^2 + 2$  1) \_\_\_\_\_  
A) Domain:  $[0, \infty)$ ; Range:  $[0, \infty)$       B) Domain: all real numbers; Range:  $[2, \infty)$   
C) Domain: all real numbers; Range:  $[3, \infty)$       D) Domain:  $[2, \infty)$ ; Range: all real numbers
- 2)  $h(x) = -4|x|$  2) \_\_\_\_\_  
A) Domain: all real numbers; Range:  $(-\infty, 0]$       B) Domain: all real numbers; Range:  $(-\infty, -3]$   
C) Domain:  $(-\infty, 0]$ ; Range: all real numbers      D) Domain:  $[0, \infty)$ ; Range:  $[0, \infty)$
- 3)  $s(x) = \sqrt{1 - x}$  3) \_\_\_\_\_  
A) Domain:  $(\sqrt{1}, \infty)$ ; Range:  $(-\infty, 0]$   
B) Domain:  $(-\infty, 1]$ ; Range:  $[0, \infty)$   
C) Domain: all real numbers; Range:  $[0, \infty)$   
D) Domain:  $(-\infty, 1) \cup (1, \infty)$ ; Range:  $(-\infty, 0) \cup (0, \infty)$

Write an equation for a function that has a graph with the given transformations.

- 4) The shape of  $y = \sqrt{x}$  is shifted 5 units to the left. Then the graph is shifted 7 units upward. 4) \_\_\_\_\_  
A)  $f(x) = \sqrt{x + 7} + 5$       B)  $f(x) = \sqrt{x + 5} + 7$   
C)  $f(x) = \sqrt{x - 5} + 7$       D)  $f(x) = 7\sqrt{x + 5}$
- 5) The shape of  $y = x^2$  is vertically stretched by a factor of 10, and the resulting graph is reflected across the x-axis. 5) \_\_\_\_\_  
A)  $f(x) = -10x^2$       B)  $f(x) = 10(x - 10)^2$   
C)  $f(x) = (x - 10)^2$       D)  $f(x) = 10x^2$

Graph the function.

6)

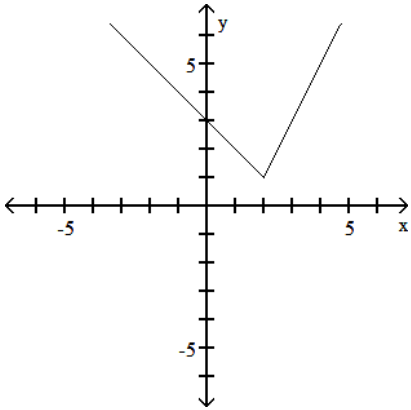
$$f(x) = \begin{cases} -x + 3 & \text{if } x < 2 \\ 2x - 3 & \text{if } x \geq 2 \end{cases}$$

- 7) Assume it costs 25 cents to mail a letter weighing one ounce or less, and then 20 cents for each additional ounce or fraction of an ounce. Let  $L(x)$  be the cost of mailing a letter weighing  $x$  ounces. Graph  $y = L(x)$ . Use the interval  $(0, 4]$ .

Answer Key

Testname: PRACTICE02

- 1) B
- 2) A
- 3) B
- 4) B
- 5) A
- 6)



7)

