Name _____ Date _____ Class _____

LESSON 6-3

Practice B

Piecewise Functions

Evaluate each piecewise function for $x = -8$ and $x = 5$.

1. $f(x) = \begin{cases} 2x & \text{if } x < 0 \\ 0 & \text{if } x \geq 0 \end{cases}$

2. $g(x) = \begin{cases} 2 - x & \text{if } x \leq 5 \\ -x^2 & \text{if } 5 < x < 8 \\ 6 & \text{if } 8 \leq x \end{cases}$

_____ _____

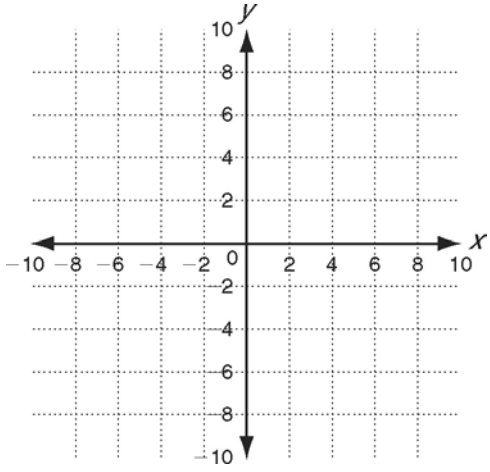
3. $h(x) = \begin{cases} 2x + 4 & \text{if } x \leq -8 \\ -1 & \text{if } -8 < x < 5 \\ x^2 & \text{if } 5 \leq x \end{cases}$

4. $k(x) = \begin{cases} 15 & \text{if } x \leq -5 \\ x & \text{if } -5 < x < 1 \\ 7 - \frac{x}{2} & \text{if } 1 < x \end{cases}$

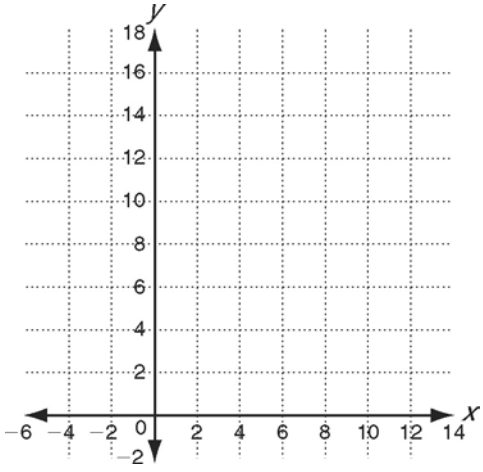
_____ _____

Graph each function.

5. $f(x) = \begin{cases} 6 & \text{if } x < -2 \\ 3x & \text{if } -2 \leq x \end{cases}$



6. $g(x) = \begin{cases} 12 - x & \text{if } x \leq 5 \\ x + 2 & \text{if } 5 < x \end{cases}$



Solve.

7. An airport parking garage costs $20 per day for the first week. After that, the cost decreases to $17 per day.

   a. Write a piecewise function for the cost of parking a car for x days. _____

   b. What is the cost to park for 10 days? _____

   c. Ms. Anderson went on two trips. On the first, she parked at the garage for 5 days; on the second, she parked at the garage for 8 days. What was the difference in the cost of parking between the two trips? _____

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Name _____ Date _____ Class _____

LESSON 6-3

Practice C

Piecewise Functions

Evaluate each piecewise function for $x = -0.4$, $x = 0$, and $x = 6$.

1. $f(x) = \begin{cases} 8 & \text{if } x \le 0 \\ x^2 & \text{if } 0 < x < 2 \\ -x^2 & \text{if } 2 \le x \le 5 \\ 3x - 1 & \text{if } x > 5 \end{cases}$

2. $g(x) = \begin{cases} x^2 - 2 & \text{if } x < 1 \\ -x & \text{if } 1 \le x \le 2 \\ 10x & \text{if } 2 < x < 5 \\ x^2 - 2x & \text{if } x \ge 5 \end{cases}$

_____ _____

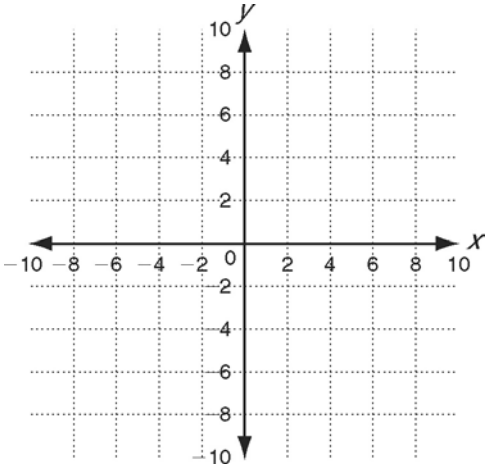
3. $h(x) = \begin{cases} 9 - 5x & \text{if } x < -0.1 \\ 2 & \text{if } -0.1 \le x \le 2 \\ x^3 - x & \text{if } 2 < x \le 6 \\ 3 - x^2 & \text{if } x > 6 \end{cases}$

4. $k(x) = \begin{cases} x - x^2 & \text{if } x \le 1 \\ 12 & \text{if } 1 < x \le 2 \\ -6 & \text{if } 2 < x < 4 \\ -x - 8 & \text{if } x \ge 4 \end{cases}$

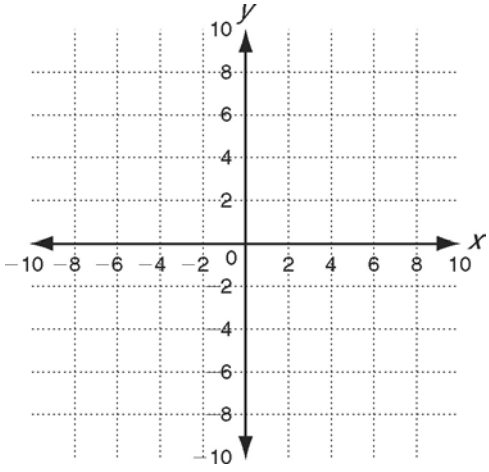
_____ _____

Graph each function.

5. $f(x) = \begin{cases} 3 - 1.5x & \text{if } x < -2 \\ 2x + 2 & \text{if } x \ge -2 \end{cases}$



6. $g(x) = \begin{cases} (x-1)^2 & \text{if } x \le 1 \\ x + 1 & \text{if } x > 1 \end{cases}$



Solve.

7. A hardware store will deliver up to 6 items for a $25 delivery charge. There is a charge of $4 for each additional item to be delivered.

   a. Write a piecewise function for the cost of having x items delivered. _____

   b. What is the charge to have 14 items delivered? _____

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