

NAME \_\_\_\_\_

DATE \_\_\_\_\_

PERIOD \_\_\_\_\_

## Unit 5: Practice Mid-Unit Assessment

### 1. Multiple Response

Select **all** the functions whose graphs include the point (12,3).

A.  $y = 4x$

B.  $y = x^4$

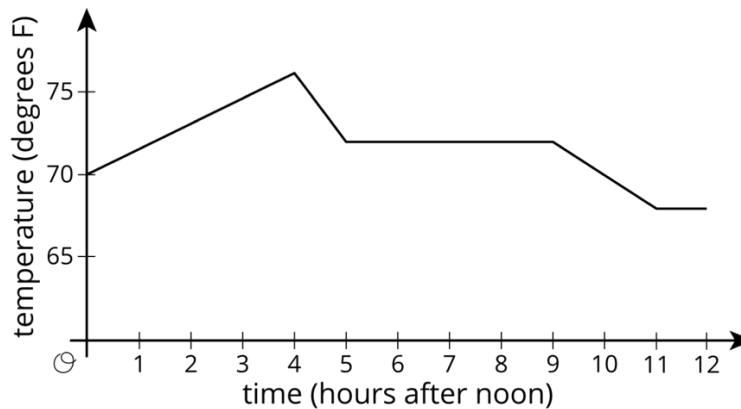
C.  $y = x + (-9)$

D.  $y = x + 9$

E.  $y = \frac{1}{4}x$

### 2. Multiple Response

This graph shows the temperature in Diego's house between noon and midnight one day.



Select **all** true statements. (If the statement is false, describe why it is not a valid statement)

- A. Time is a function of temperature.
- B. Temperature is a function of time.
- C. The lowest temperature occurred between 11:00 and 12:00
- D. The temperature was increasing between 5:00 and 9:00.
- E. The temperature was 70 degrees twice during the 12-hour period.
- F. There was a four-hour period during which the temperature was increasing.

**3. Multiple Choice. Select only one answer.**

This table shows a linear relationship between the amount of water in a tank and time.

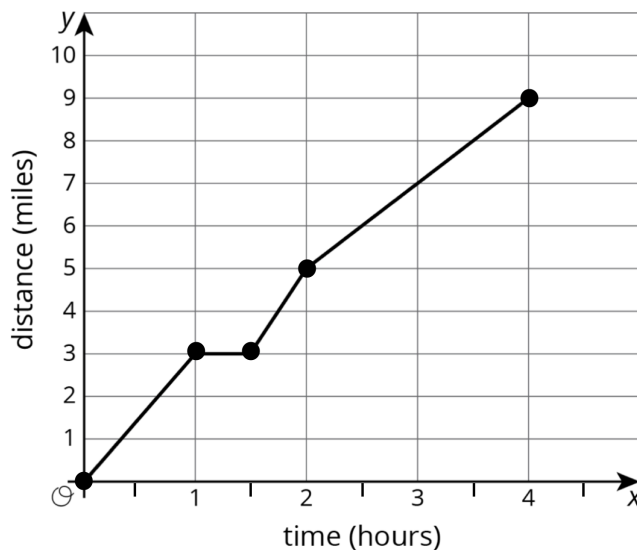
Time (in minutes)	Water (in Gallons)
0	48
4	36
8	24
12	12
16	0

Which of these statements is true?

- A. The water in the tank is increasing at a rate of 3 gallons per minute.
- B. The water in the tank is increasing at a rate of 12 gallons per minute.
- C. The water in the tank is decreasing at a rate of 3 gallons per minute.
- D. The water in the tank is decreasing at a rate of 12 gallons per minute.

**4. Fill in the Numeric Grid.**

Elena goes for a long walk. This graph shows her time and distance traveled throughout the walk.



What was her fastest speed, in miles per hour? \_\_\_\_\_

Which two ordered pairs did you use to determine this speed? (     ,     ) and (     ,     )

Using the two points, what was the starting and ending distance in miles? \_\_\_\_\_

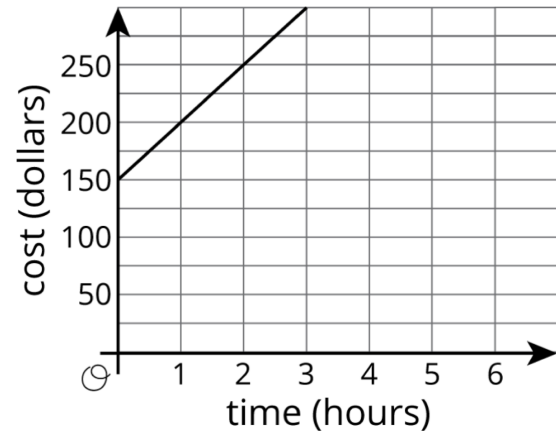
What was the total amount of time in hours between these two points? \_\_\_\_\_

5. Two plumbing companies charge money for each hour of work, plus a one-time fee.

**A Plus Plumbing** charges according to this partial table:

Time (in hours) $x$	Cost (in dollars) $y$
0	
1	\$125
3	\$275
6	\$500

**Quality Plumbing** charges according to this graph:



a. **Multiple Choice. Select only one answer.**

How much does *A Plus Plumbing* cost for each hour of work?

- A. \$0                      B. \$50                      C. \$75                      D. \$125

b. **Multiple Choice. Select only one answer.**

What is the *A Plus Plumbing* one-time fee?

- A. \$0                      B. \$50                      C. \$75                      D. \$125

c. **Multiple Choice. Select only one answer.**

How much does *Quality Plumbing* charge for each hour of work?

- A. \$50                      B. \$100                      C. \$150                      D. \$200

d. **Multiple Choice. Select only one answer.**

What is the *Quality Plumbing* one-time fee?

- A. \$50                      B. \$100                      C. \$150                      D. \$200

NAME \_\_\_\_\_

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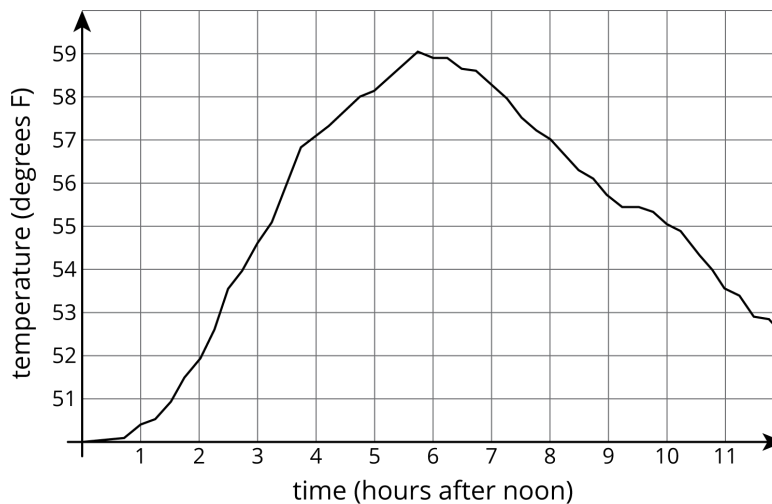
PERIOD \_\_\_\_\_

**PRACTICE for Unit 5: Mid-Unit Assessment**

1. Select **all** the functions whose graphs include the point (25,5).

- A.  $y = \frac{1}{5}x$
- B.  $y = x + 20$
- C.  $y = x^2$
- D.  $y = x - 20$
- E.  $y = 5x$

2. The graph shows the temperature between noon and midnight in one day in a certain city.



- A. Was it warmer at 3:00 p.m. or 9:00 p.m.?
- B. Approximately when was the temperature highest?
- C. Find another time that the temperature was the same as it was at 4:00 p.m.
- D. Did the temperature change more between 1:00 p.m. and 3:00 p.m. or between 3:00 p.m. and 5:00 p.m.?
- E. Does this graph show that temperature is a function of time, or time is a function of temperature?
- F. When the input for the function is 8, what is the output? What does that tell you about the time and temperature?

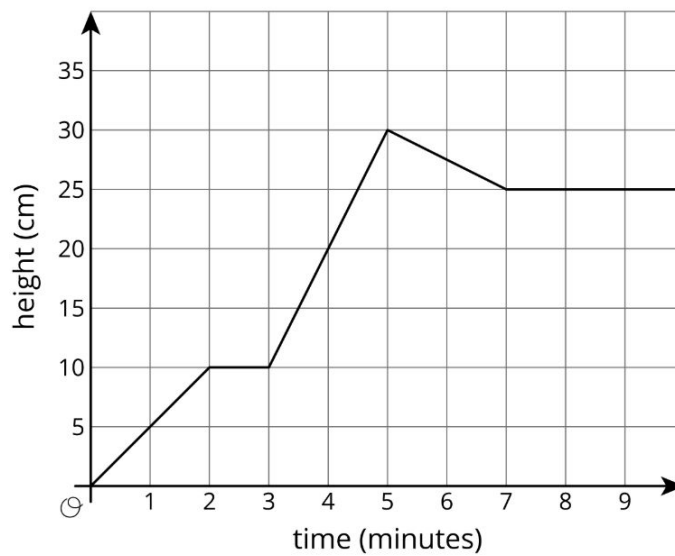
3. This table shows a linear relationship between the amount of gasoline in a tank and time.

Time (hours)	Gasoline (gallons)
0	60
10	40
20	20

Describe the relationship.

The gasoline in the tank is \_\_\_\_\_ at a rate of \_\_\_\_\_ gallons per hour.  
(increasing or decreasing)

4. Jada fills her aquarium with water. This graph shows the height of the water, in cm, in the aquarium as a function of time in minutes.



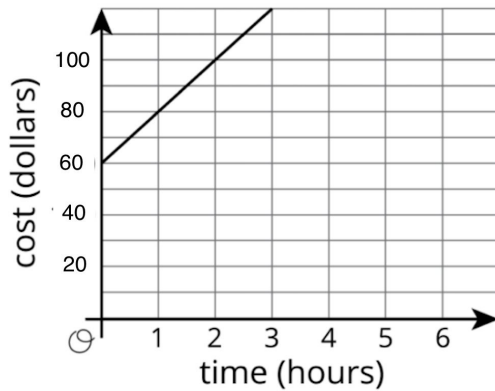
What was the fastest rate that the aquarium was filled, in cm per minute? \_\_\_\_\_

#5 - 9 Two Heating and Air Conditioning companies charge money for each hour of work, plus a one-time fee.

*Al's Air charges according to this table:*

<i>Time (hours)</i>	<i>Cost (dollars)</i>
1	110
4	155
6	185

*H & C charges according to this graph:*



5. How much does *Al's Air* charge for each hour of work?

6. What is the *Al's Air* one-time fee?

7. How much does *H & C* charge for each hour of work?

8. What is the *H & C* one-time fee?

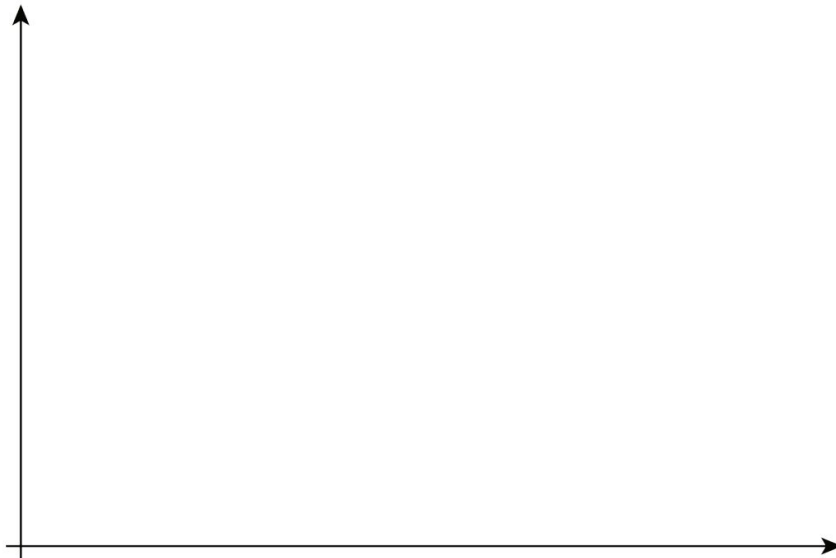
9. After \_\_\_\_\_ hours, *Al's Air* and *H & C* will charge the same total for the same amount of time.

**10.** Allison counts 4 cells under a microscope. She counts them again each day for five days, and finds that the number of cells quadrupled each day—from 4 to 16, then from 16 to 64, and so on.

Is the number of cells a function of the number of days? If so, is it linear? Explain your reasoning.

**11.** Draw a graph of Pete’s car’s distance from home as a function of time for this situation:

Pete drives his car from his house to the grocery store and parks while he shops. Then he drives home at a slower speed than he drove to the store.



Label the axes appropriately. You do not have to include numbers on the axes or the coordinates of points on your graph.