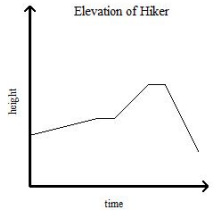
Directions: Answer the following question(s).

1 The graph shows the height of a hiker above sea level. The hiker walks at a constant speed for the entire trip. What are the variables? Describe how the variables are related at various points on the graph.



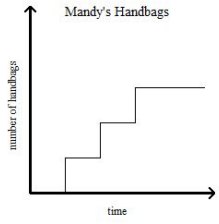
A. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is climbing a steep incline. Flat parts of the graph show where the elevation does not change, which means the hiker stopped to rest. The steep part at the end of the graph shows that the hiker is descending a gentle slope.

B. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is walking up a gentle slope. Flat parts of the graph show where the elevation does not change, which means the trail is flat here. The steep part at the end of the graph shows that the hiker is descending a steep incline.

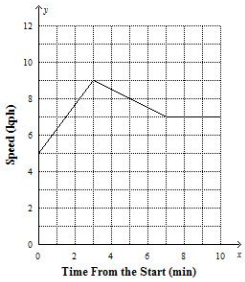
C. The variables are height and time. For the first part of the graph, the height is increasing slowly, which means the hiker is climbing a steep incline. Flat parts of the graph show where the elevation does not change, which means the trail is flat here. The steep part at the end of the graph shows that the hiker is descending a steep incline.

D. All of the above.

2 The graph shows the number of handbags that Mandy made in one day. What are the variables? Describe how the variables are related at various points on the graph.



3 The graph below shows your speed at different times riding a bicycle uphill, downhill, and on level pavement.



a. For how long were you going uphill?
b. For how long were you going downhill?
c. For how long were you riding on level pavement?

A. 4 min; 3 min; 3 min

B. 3 min; 3 min; 3 min

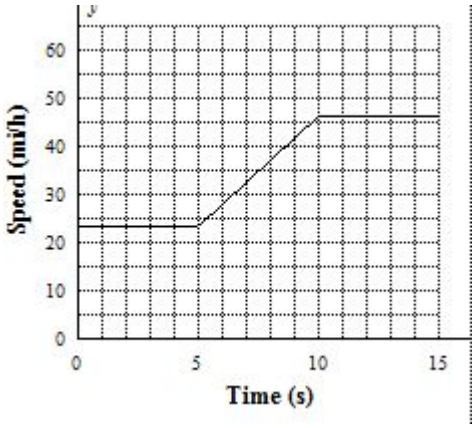
C. 4 min; 3 min; 2 min

D. 3 min; 4 min; 3 min

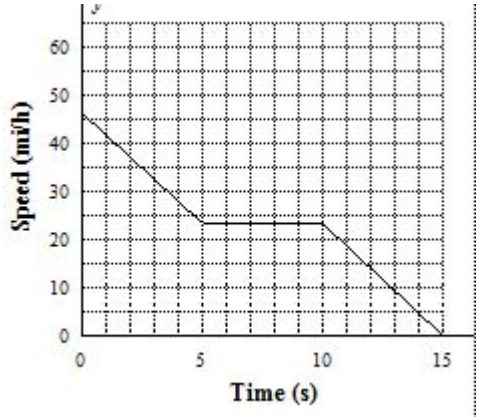
Directions: Answer the following question(s).

4 A car traveling at 23 mi/h accelerates to 46 mi/h in 5 seconds. It maintains that speed for 5 seconds and then slows to a stop in 5 seconds. Sketch and label a graph showing the car's speed over time.

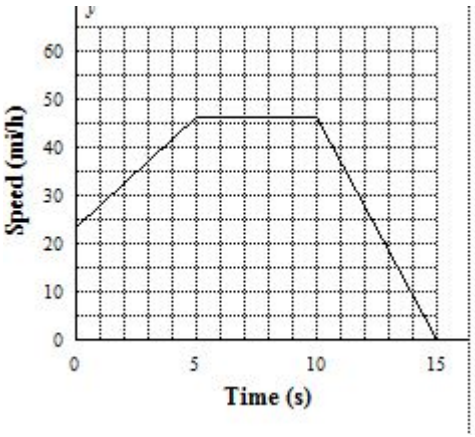
A.



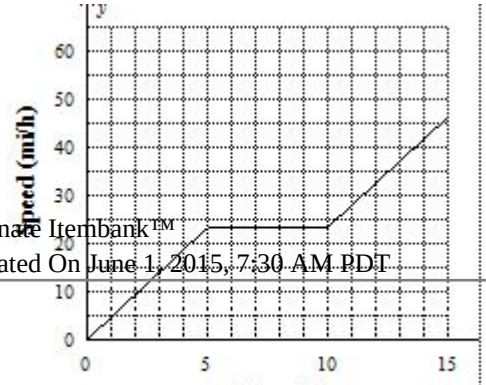
B.



C.



D.



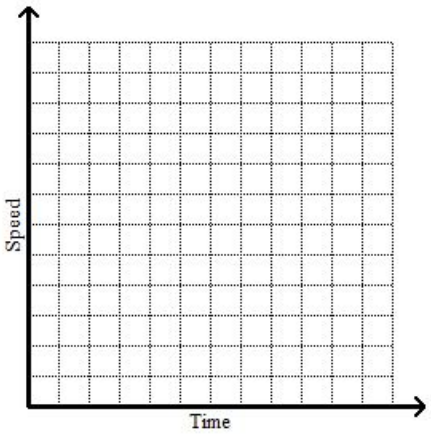
5 Sketch a graph of the speed of a city bus on a daily route. Label each section.

A - bus pulls away from a stop and increases speed

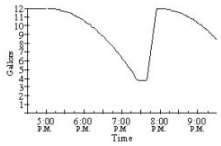
B - bus is at a constant speed between stops

C - bus is stopped

D - bus increases speed after stopping



6 The graph shows the amount of gas in the tank of Sharon's car during a trip to her mom's house. At what time did she stop to buy gas?



A. about 9:00 P.M.

B. about 7:25 P.M.

C. about 7:15 P.M.

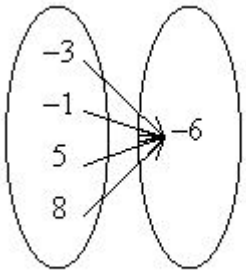
D. about 8:00 P.M.

Directions: Answer the following question(s).

7 Identify the mapping diagram that represents the relation and determine whether the relation is a function.

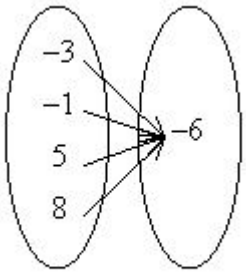
{(-3,-6), (-1, -6), (5, -6), (8, -6)}

A.



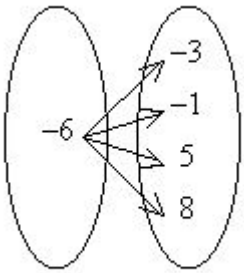
The relation is not a function.

B.



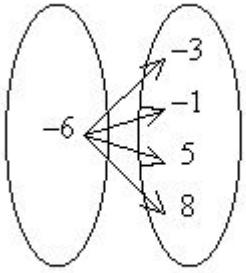
The relation is a function.

C.



The relation is a function.

D.



The relation is not a function.

8 The function f(x)=39x represents the number of jumping jacks f(x) you can do in x minutes. How many jumping jacks can you do in 5 minutes?

A. 195 jumping jacks
B. 7 jumping jacks
C. 144 jumping jacks
D. 234 jumping jacks

9 What is the table of values for y=x-6?

A.

x	y
−5	1
−8	−14
−7	−13

B.

x	y
−5	−11
−8	−2
−7	−13

C.

x	y
−5	−11
−8	−14
−7	−13

D.

x	y
−5	1
−8	−2
−7	−1

Directions: Answer the following question(s).

10 **Select *all* possible numbers that when replaced with the "?" in the set of ordered pairs {(3, 4), (–2, –5), (?, 0)} would create a function.**

A. –5
B. –2
C. 0
D. 3
E. 7

11 Use the function rule f(x)= 3x -2. Find the output f(1.5)?

A. 2.5
B. -2.5
C. 6.5
D. -6.5

12 Identify the domain and range of the relation.

{(-4,2), (-9,-5), (-4,12), (8, -8) }

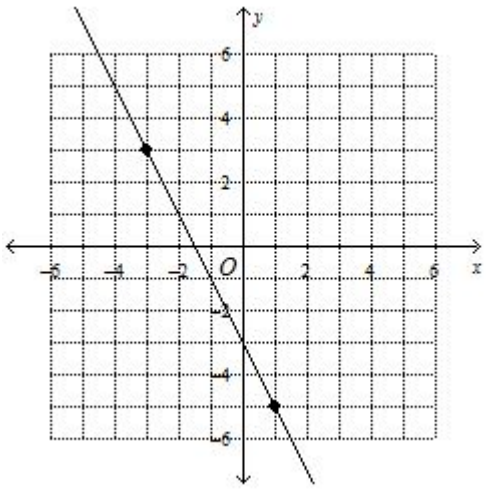
13 **Which relation is a function?**

A. {(4, –2), (4, 2), (9, –3), (9, –3)}
B. {(5, –2), (5, –1), (5, 0), (5, 1)}
C. {(4, –1), (5, –7), (6, 2), (5, 10)}
D. {(3, 0), (5, 4), (7, 0), (8, 2)}

14 **Which relation is a *not* function?**

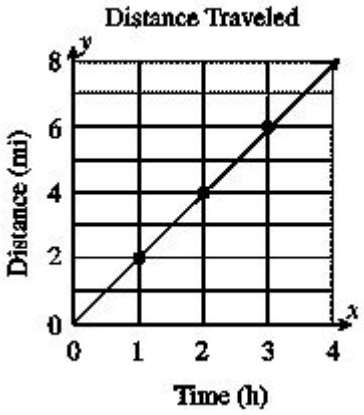
A. {(10, –5), (8, –4), (4, –2), (2, 0)}
B. {(1, –2), (1, –4), (1, 0), (1, 8)}
C. {(–3, 9), (–2, 4), (–1, 1), (1, 1)}
D. {(3, 10), (5, –5), (6, 6), (9, 11)}

15 Find the slope of the line.



A. 2
B. -1/2
C. -2
D. 1/2

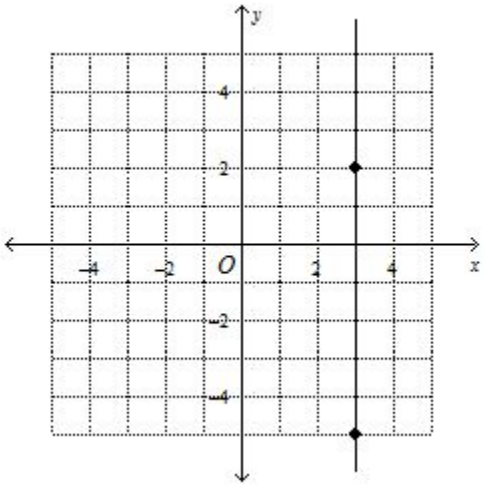
16 Find the slope of the line. Describe how one variable changes in relation to the other.



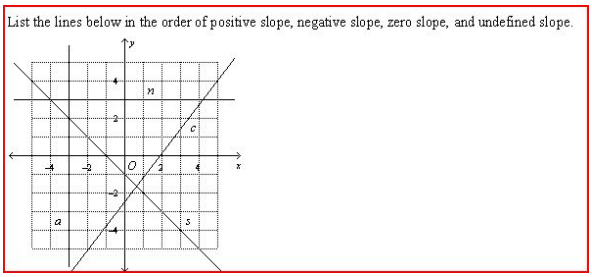
A. -1/2; distance decreases 1 mile every 2 hours
B. 1/2; distance increases 1 mile every 2 hours
C. 2; distance decreases by 2 miles per hour
D. 2; distance increases by 2 miles per hour

Directions: Answer the following question(s).

17 Find the slope of the line.



18 List the lines below in the order of positive slope, negative slope, zero slope, and undefined slope.



A. s, c, n, a
B. c, s, a, n
C. c, s, n, a
D. a, c, n, s