

TEST NAME: **Math 8 benchmark (Quarter 3)**  
TEST ID: **2935506**  
GRADE: **08 - Eighth Grade - 09 - Ninth Grade**  
SUBJECT: **Mathematics**  
TEST CATEGORY: **My Classroom**

03/07/19, Math 8 benchmark (Quarter 3)

Student: \_\_\_\_\_

Class: \_\_\_\_\_

Date: \_\_\_\_\_

1. How many solutions does the equation  $3x - 2x + 4 = 2 + x + 2$  have?

- A. no solution
- B. one solution
- C. two solutions
- D. infinitely many solutions

2. What is the value of  $y$  in the equation below?

$$4y + 8 = 6y + 2$$

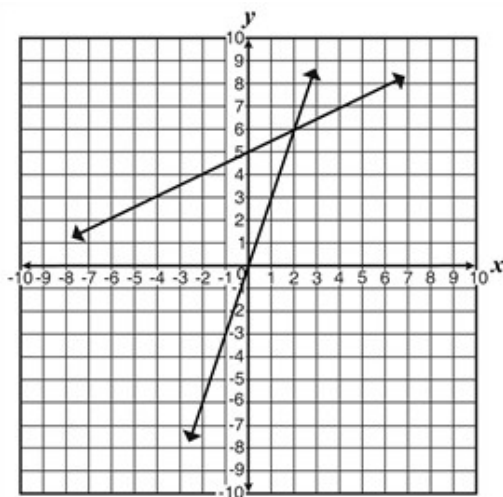
- A.  $\frac{3}{5}$
- B. 1
- C. 3
- D. 5

3. Which equation has only one solution?

- A.  $6r = 5r + r$
- B.  $4m + 5 = 25$
- C.  $8v + 11 = 8v + 11$
- D.  $2 - 3p = -3p + 5$

4. A linear system of equations is graphed below.

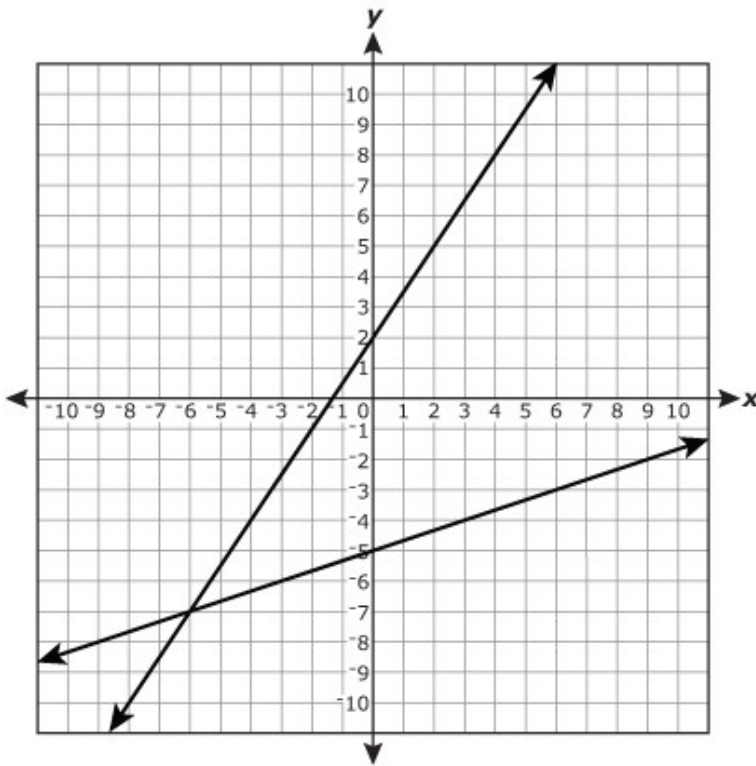
$$\begin{cases} y = 3x \\ y = \frac{1}{2}x + 5 \end{cases}$$



Which ordered pair is the solution to the system?

- A. (0, 0)
- B. (0, 5)
- C. (2, 6)
- D. (6, 2)

5. Danisha represented a system of linear equations with the graph below.



What is the solution to the system of equations?

- A.  $(-7, -6)$
- B.  $(-6, -7)$
- C.  $(0, 2)$
- D.  $(2, -5)$

6. The equations below represent the total amount charged,  $y$ , by two different plumbers as a function of the number of hours worked,  $x$ .

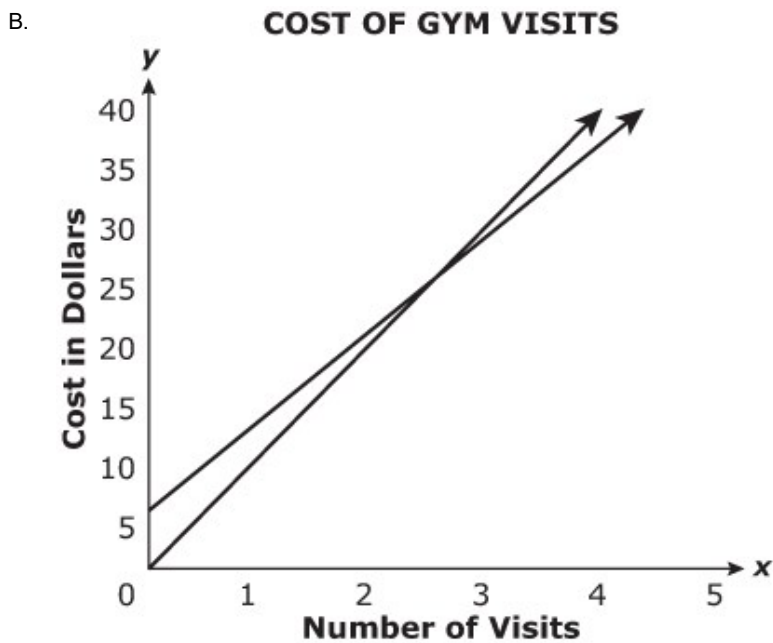
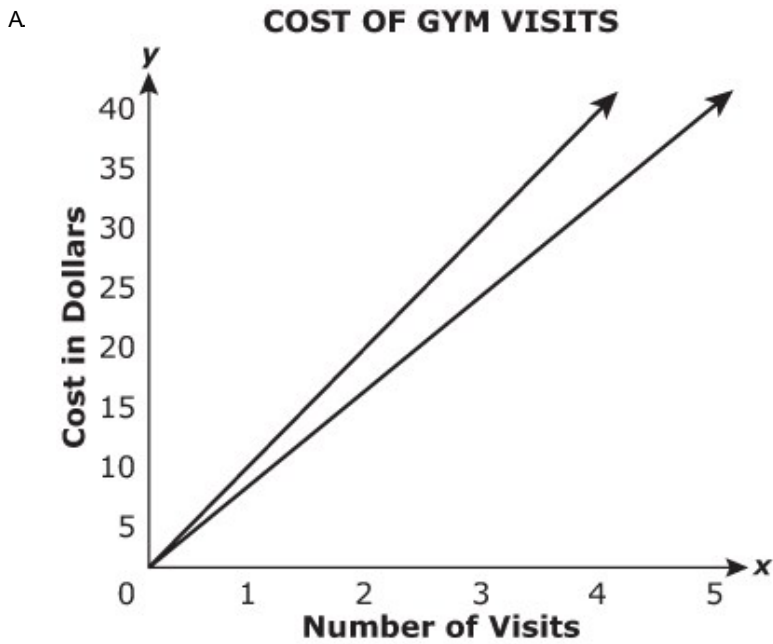
**Plumber A:**  $y = 20x + 60$

**Plumber B:**  $y = 40x$

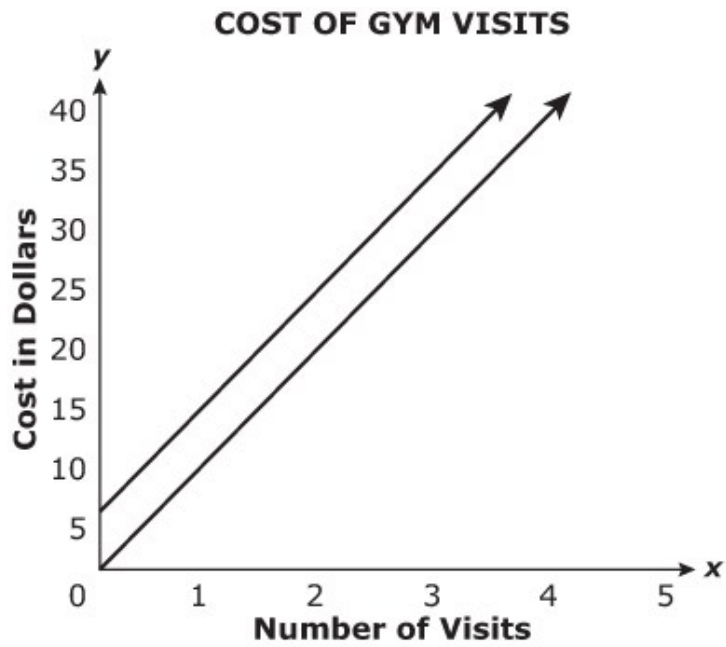
The graphs of these functions cross at the point  $(3, 120)$ . What does the point  $(3, 120)$  signify?

- A. The point  $(3, 120)$  is the slope of the system of equations.
- B. The point  $(3, 120)$  is when the plumbers worked 120 hours.
- C. The point  $(3, 120)$  is the  $y$ -intercept of the system of equations.
- D. The point  $(3, 120)$  is the solution for the system of equations.

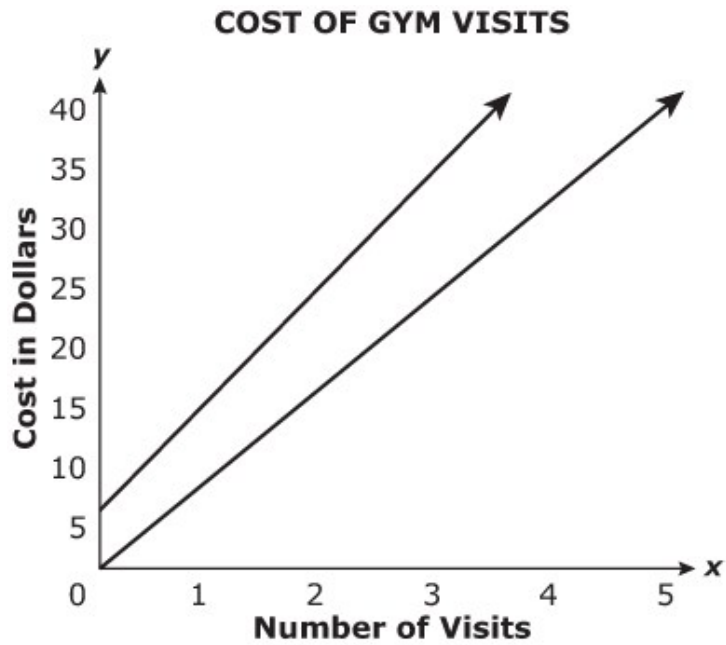
7. Raul is choosing from two plans at his gym. He can either pay a set price for each visit, or he can buy a membership, which would have a lower price per visit in addition to a membership fee. Which model could be used to determine which plan would be less expensive based on the number of visits he makes?



C.



D.



8. Which table of values is a linear function?

A.

<b>x</b>	<b>y</b>
-1	1
0	0
1	1

B.

<b>x</b>	<b>y</b>
1	1
2	4
3	9

C.

<b>x</b>	<b>y</b>
-1	1
2	4
5	7

D.

<b>x</b>	<b>y</b>
0	0
3	2
5	4

9. Which set of points is linear?

A.  $\{(1, 4), (2, 6), (3, 6), (4, 10)\}$

B.  $\{(1, 5), (0, 0), (1, 2), (0, 4)\}$

C.  $\{(-4, -5), (-2, -1), (0, 3), (2, 7)\}$

D.  $\{(-4, -6), (-2, 1), (0, 2), (3, 5)\}$

10. Two different party-rental facilities charge a flat fee to rent the facility and a cost per person attending the party. John's Party Rental uses the equation  $y = 3.50x + 75$  to calculate the cost for a party, where  $y$  is the total cost for  $x$  people. Sue's Party Rental uses the table below to calculate the cost for a party.

Number of People	Total Cost
10	\$107.50
15	\$126.25
20	\$145.00
25	\$163.75

What is the difference in the cost per person at the two different party-rental facilities?

- A. \$0.25
  - B. \$0.50
  - C. \$1.00
  - D. \$5.00
11. Which equation is a linear function?
- A.  $2xy = -24$
  - B.  $y = 2x^2 - 3$
  - C.  $2x + 3y = 12$
  - D.  $y^2 = x + 3$



12. In which table is  $y$  a linear function of  $x$ ?

A.

$x$	$y$
-2	-12
0	-6
1	-2
3	4

B.

$x$	$y$
-3	19
-1	7
2	-11
4	-23

C.

$x$	$y$
-2	14
0	1
1	-2
3	-11

D.

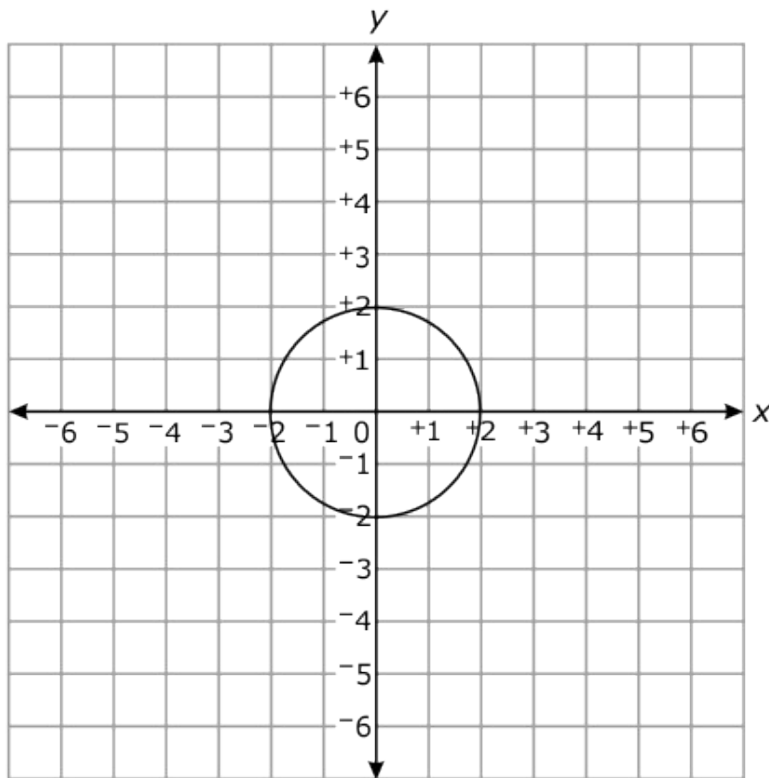
$x$	$y$
-3	16
-1	8
0	0
1	-8

13. Which function is linear?

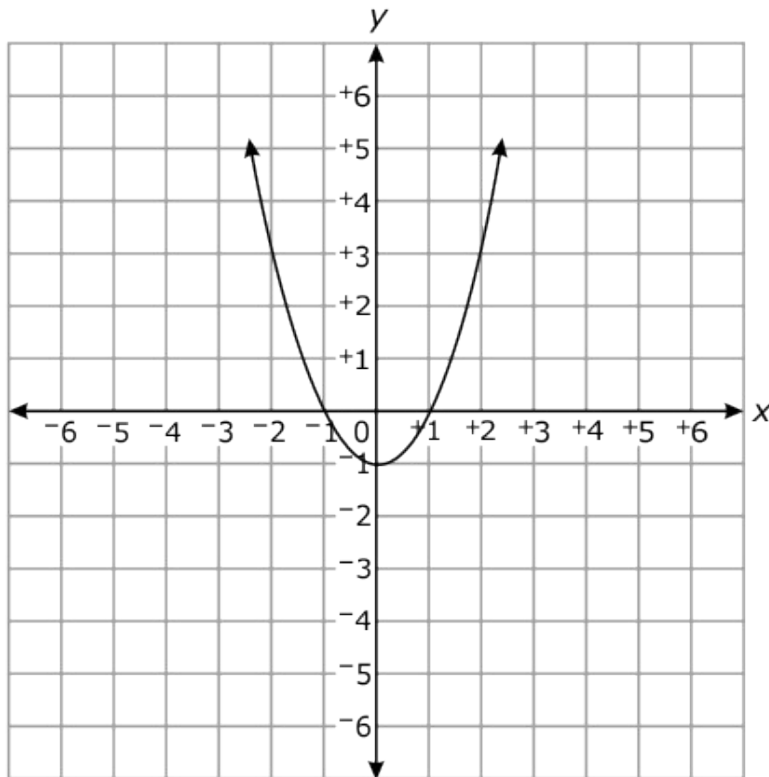
A.  $y = x^2 + 4$

B.  $x = y - 5$

C.



D.



14. Sammy's T-Shirt Company charges a fixed rate for creating a T-shirt design, plus an additional charge for every T-shirt ordered. Bob paid \$277.50 for 25 shirts, and Sandra paid \$362.50 for 35 shirts. Which equation represents the cost to order  $x$  T-shirts?

- A.  $y = 10x + 85$
- B.  $y = 10x + 65$
- C.  $y = 8.50x + 85$
- D.  $y = 8.50x + 65$

15. Which relation is a nonlinear function?

A.

$x$	$y$
-4	9
-1	5
1	1
4	-3

B.

$x$	$y$
1	2
2	2
3	2
4	2

C.

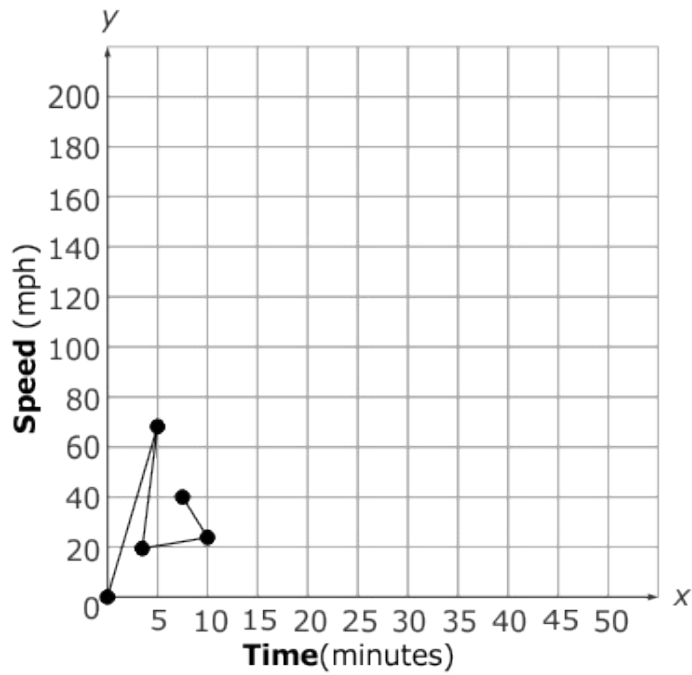
$x$	$y$
-5	-15
-1	-7
3	1
6	7

D.

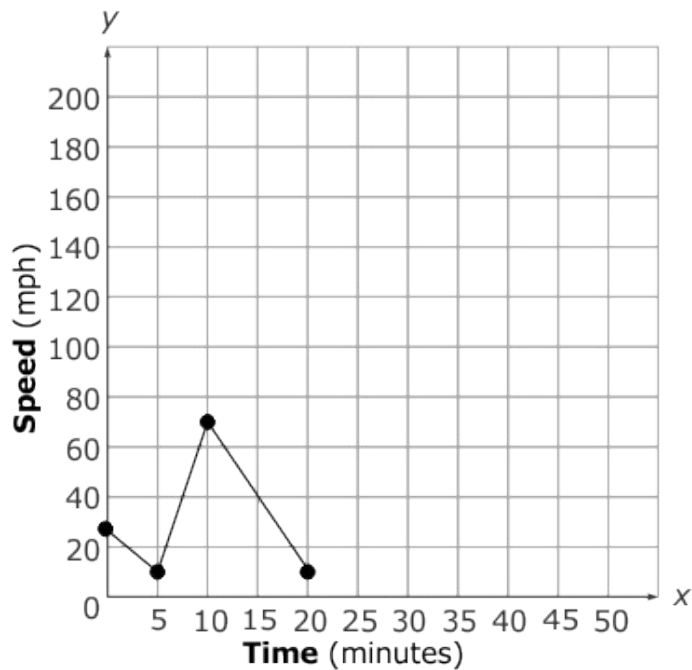
$x$	$y$
2	-3
5	-9
9	-17
12	-23

16. Which graph **best** represents Marsha driving a car to get on the interstate, setting her cruise control, increasing her speed to pass another car, and then exiting off the interstate and stopping at a stop sign?

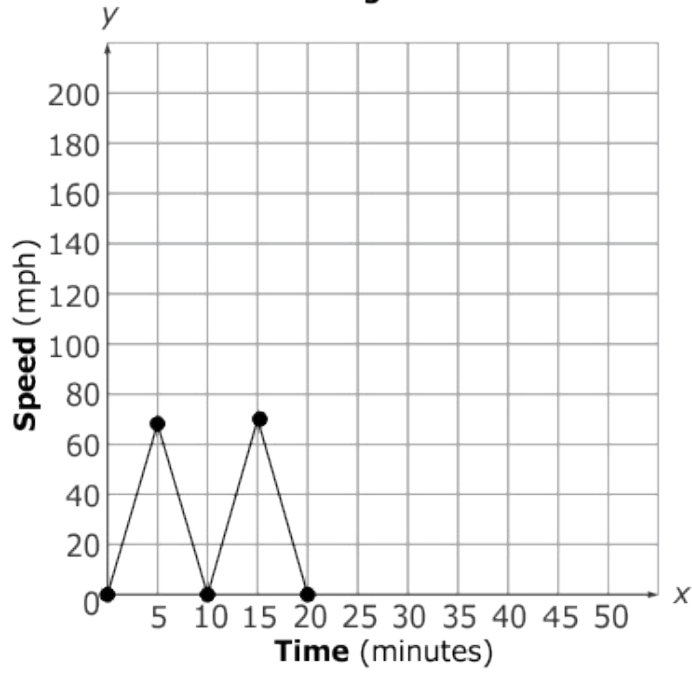
A. **Marsha's Driving on the Interstate**



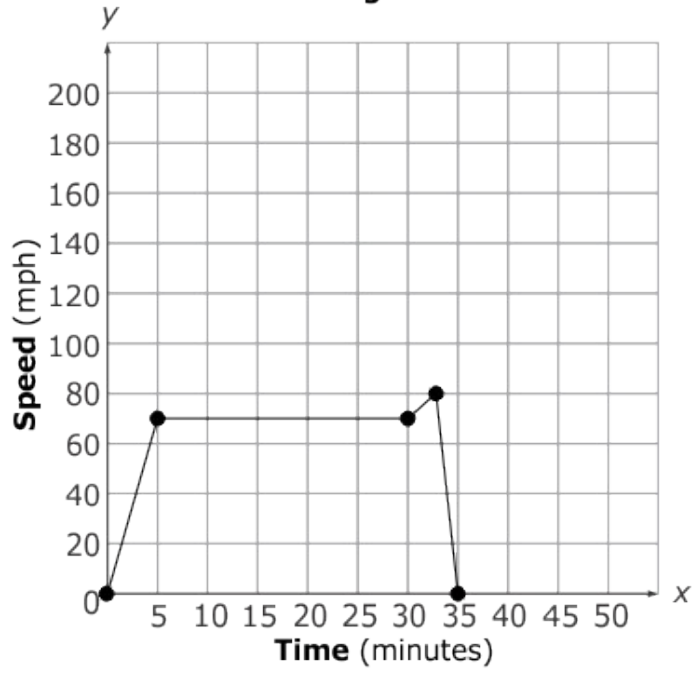
B. **Marsha's Driving on the Interstate**



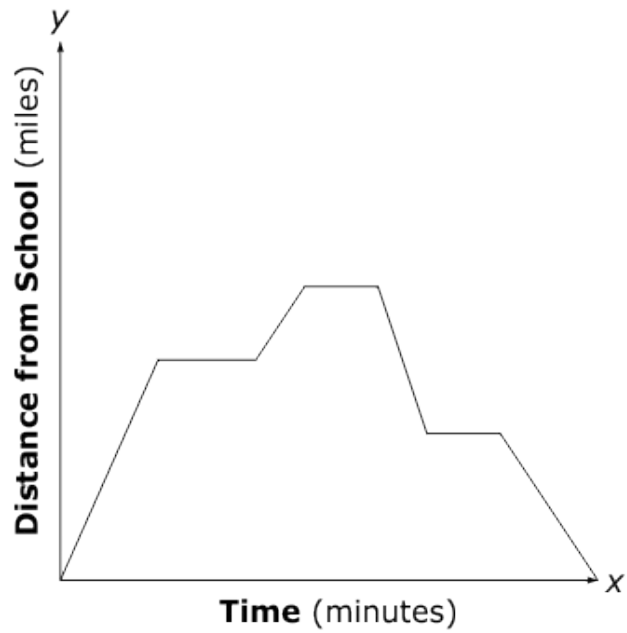
C. **Marsha's Driving on the Interstate**



D. **Marsha's Driving on the Interstate**



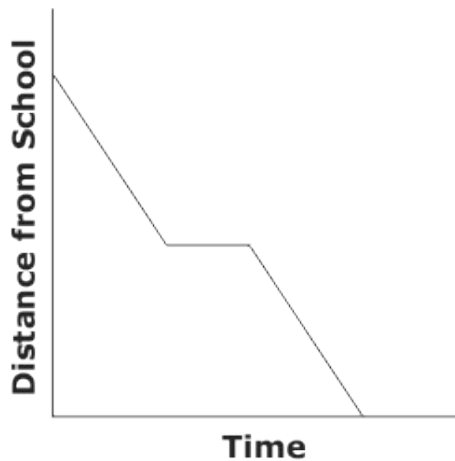
17. The graph below shows the distance a school bus is from school.



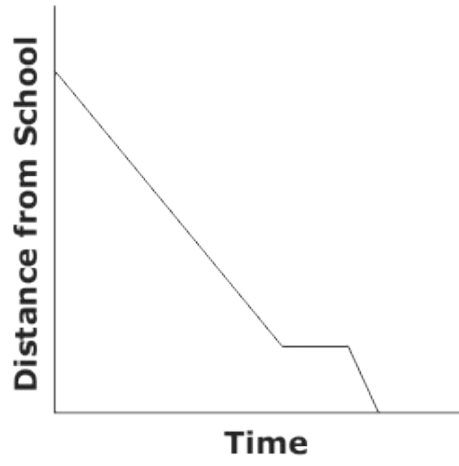
Which **best** describes what the bus is doing in the flat parts of the graph?

- A. speeding up
  - B. slowing down
  - C. sitting still
  - D. returning to school
18. Roberto was walking home after school. He stopped half way between his home and school to visit his friend who was sick. He then left his friend and walked the rest of the way home. Which graph represents Roberto's walk home?

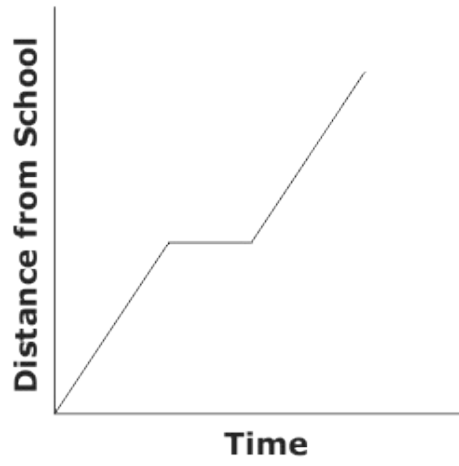
A.



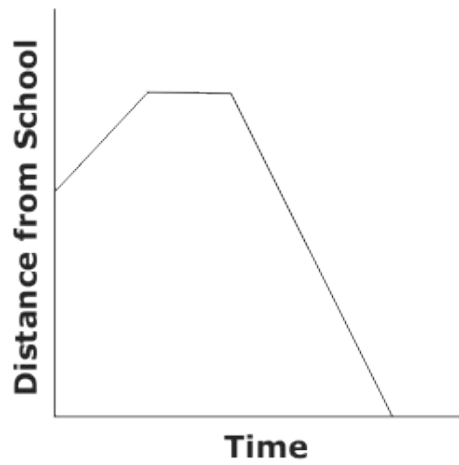
B.



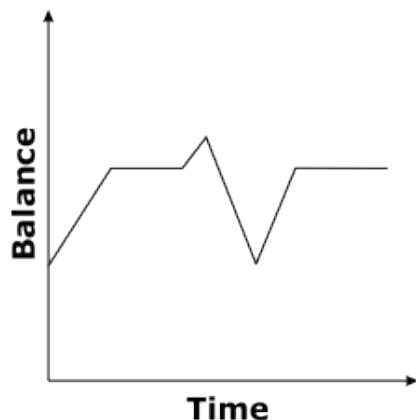
C.



D.



19. The graph below shows the relationship between time and the balance in a checking account over a twelve-month period.



Based on the graph, which statement is true?

- A. The balance in the account never drops below the starting balance.
  - B. The balance at the end of the twelve-month period is the same as the beginning balance.
  - C. The balance in the account increases at a steady rate, decreases at a steady rate and then levels off.
  - D. The balance in the account increases at the beginning, and then decreases by the end of the twelve-month period.
20. Betsy is 3 years older than Aileen. Which graph BEST represents the relationship between their ages?

