

ANSWERS

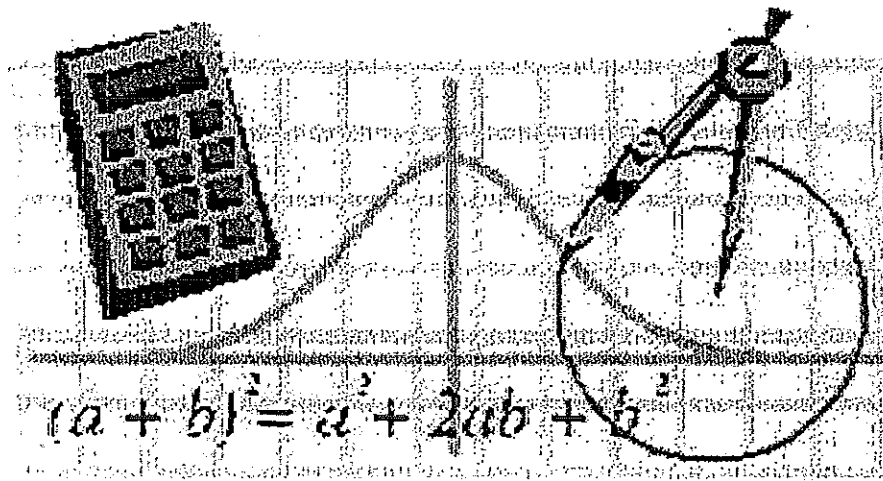
Downingtown High School

East/West

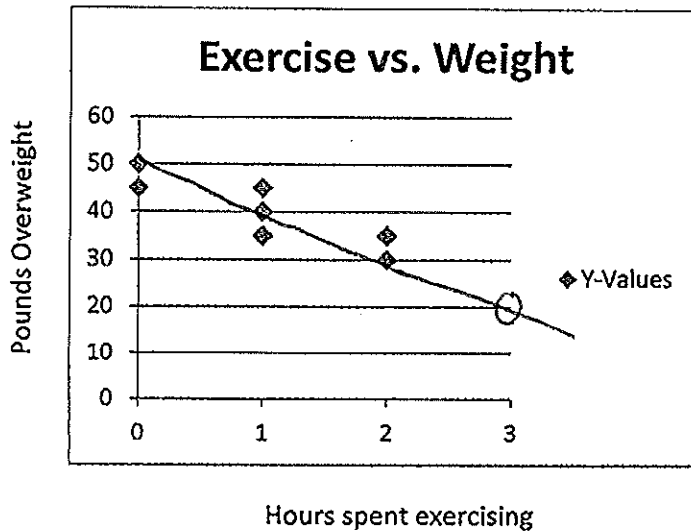
Keystone Algebra 1 Review

Module 2

Coordinate Geometry



1. A researcher made the following graph showing the number of hours per week that people exercise versus the number of pounds they are overweight.



draw a line of best fit.

Calculate y-value if $x = 3$

Predict the number of pounds overweight someone would be if they spend 3 hours per week exercising.

A. 30

B. 25

C. 20

D. 10

2. The table below shows how the amount remaining to pay on a bank loan is changing over time.

Time (months)	Amount Remaining (dollars)
0	5,000
1	4,800
2	4,600
3	4,400
4	4,200

since the amount is \$200 less each month, the slope is -200

Let x represent the time in months, and y represent the amount in dollars remaining to pay. Which equation describes the relationship between x and y ?

A. $y = -800x + 5000$

B. $y = -200x + 5000$

C. $y = 200x - 5000$

D. $y = 800x - 5000$

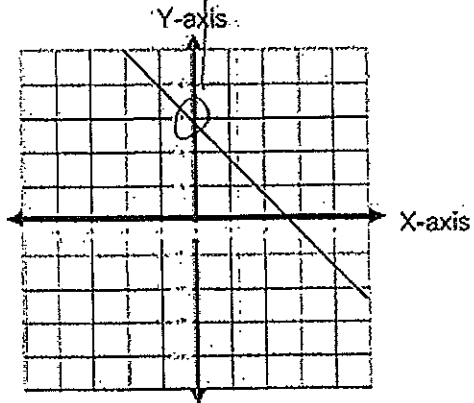
3. Which of the following matches the graph?

A. $f(x) = -\frac{3}{2}x + 3$

B. $f(x) = -\frac{2}{3}x - 2$

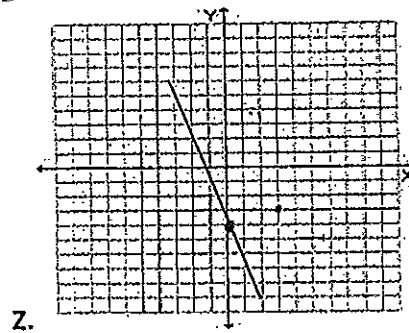
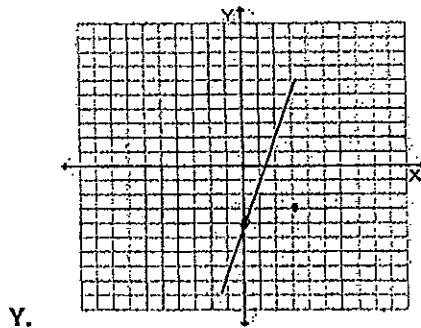
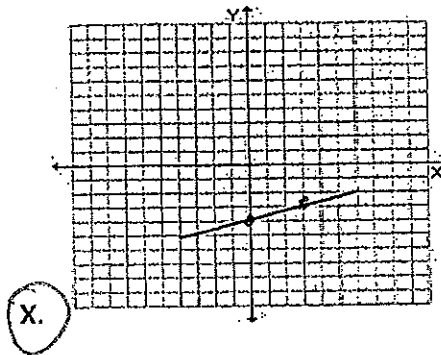
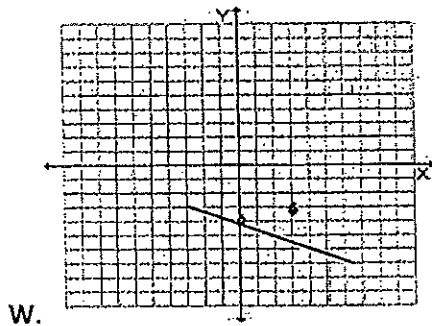
C. $f(x) = \frac{2}{3}x - 2$

D. $f(x) = \frac{3}{2}x - 3$

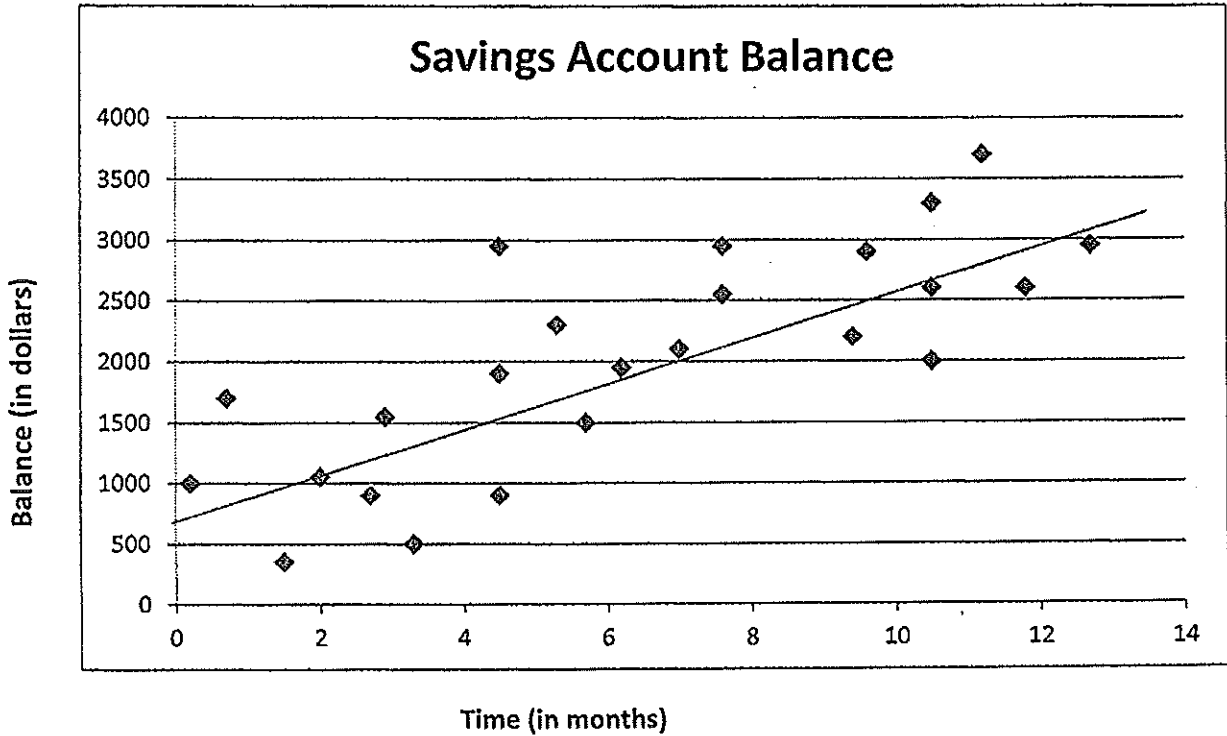


4. Which graph corresponds to the table below?

X	0	1	2	3	4
y	-4	$-\frac{11}{3}$	$-\frac{10}{3}$	-3	$-\frac{8}{3}$



6.



The graph above shows a line of best fit for data collected on the saving account balances of several students in relation to the time money has been put into the accounts. What is the equation of the line of best fit?

A. $y = -\frac{3}{5}x + 630$

B. $y = 200x + 630$

C. $y = -200x + 630$

D. $y = \frac{3}{5}x + 630$

$(2, 1000)$

$(7, 2000)$

$$\frac{2000 - 1000}{7 - 2} = \frac{1000}{5} = 200$$

So slope (m) ≈ 200

7. In P. E. class, the students recorded their number of heartbeats after exercising. Below is a chart with the number of heartbeats recorded after 30, 50 and 70 seconds of exercise.

What is the rate of change of the data in heartbeats per minute?

$$m = \frac{115 - 69}{50 - 30} = \frac{46}{20} \text{ seconds}$$

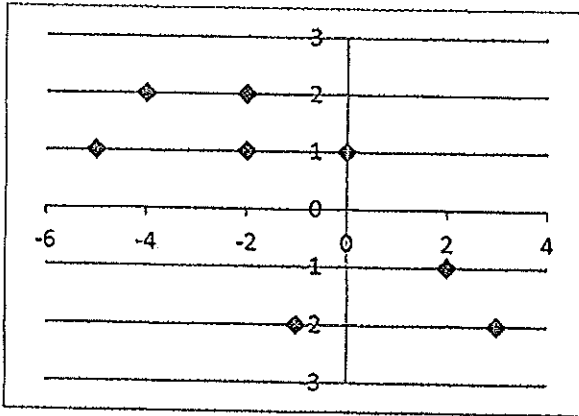
Seconds Passed	No. of Heartbeats
30	69
50	115
70	161

multiply by $\frac{3}{3}$ to change in 60 seconds, which = 1 minute $\frac{46}{20} \cdot \frac{3}{3} = \frac{138}{60}$

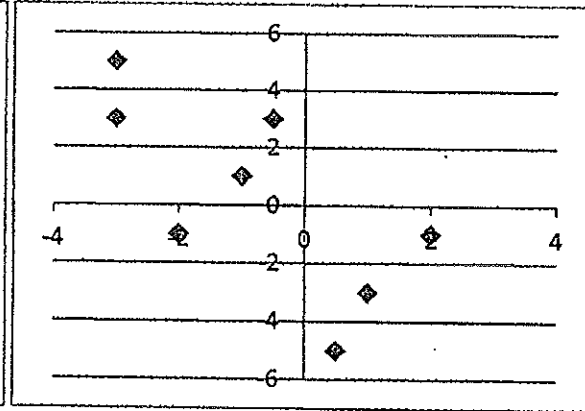
A. 138 B. 230 C. 92 D. 115

8. Which scatter plot most likely has a line of best fit represented by $y = 2x + 1$?

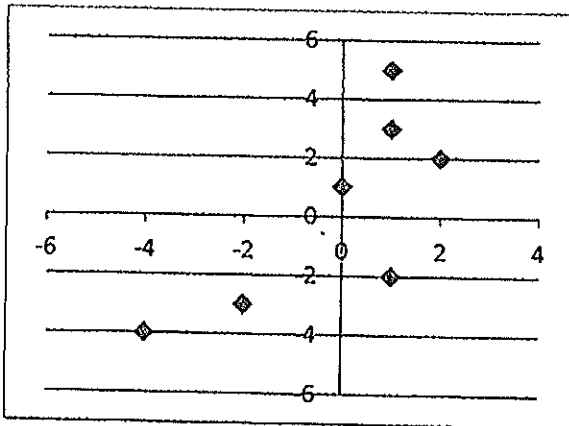
W.



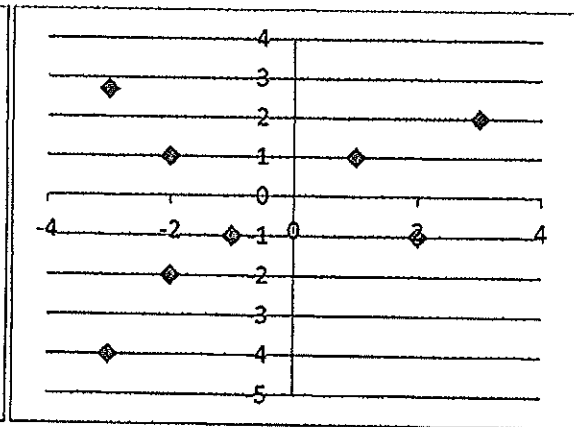
X.



Y.

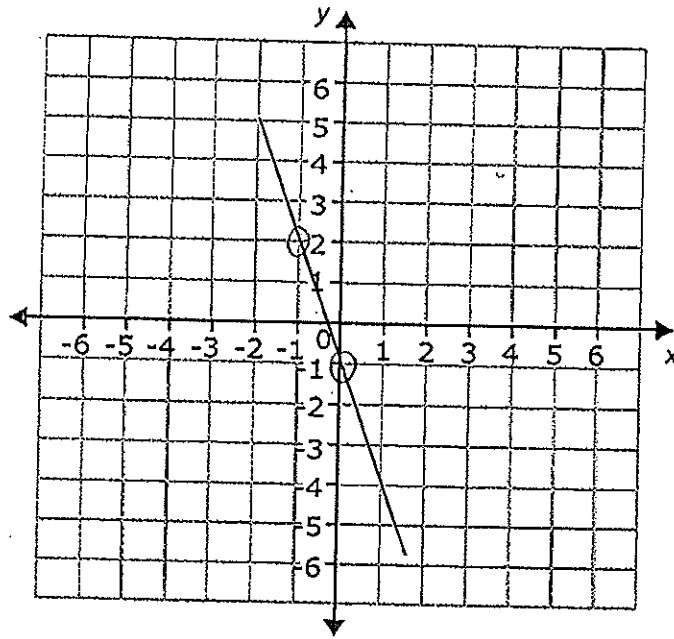


Z.



want one with a positive slope that starts at 1 on the y-axis.

9. Which of the following equations matches the graph below?



$$\begin{aligned} &(-1, 2) \\ &(0, -1) \end{aligned}$$

$$\frac{2 - (-1)}{-1 - 0} = \frac{3}{-1} = -3$$

~~it~~ hits -1 on y-axis

A. $y = -\frac{1}{3}x - 1$

B. $y = -3x - 1$

C. $y = 3x + 1$

D. $y = \frac{1}{3}x + 1$

10. Megan is going on a long distance road trip. She drives for 19 miles before being able to travel at a constant speed using cruise control. The equation $y = 68x + 19$ can be used to find her total distance traveled. If y is the total number of miles driven, and x is the number of hours driven after reaching 19 miles, which statement best describes the rate of change in the distance traveled?

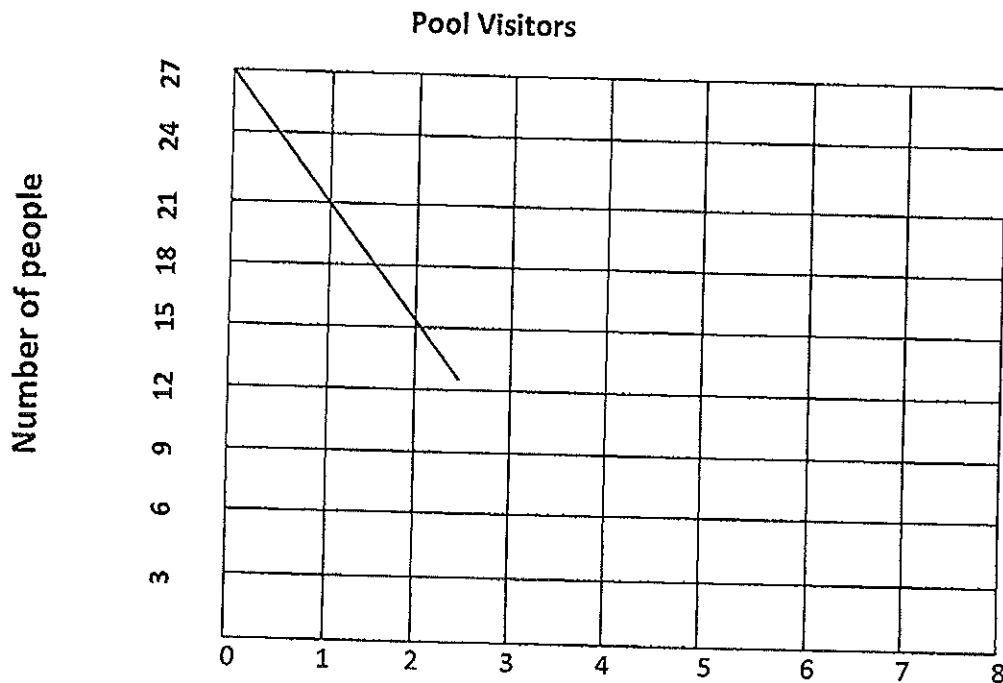
A. For every hour, she will drive 87 miles.

B. For every hour, she will drive 68 miles.

C. For every two hours, she will drive 68 miles.

D. For every 19 hours, she will drive 87 miles.

11. Tom recorded how many people were at the community pool over a few hours and displayed some of the data on the graph below. Assume the pattern continues.



- A. Write an equation to find how many people were at the pool (y) based on the hour(x).

$$y\text{-int: } (0, 27)$$

$$\text{slope: } (0, 27) (1, 21)$$

$$m = \frac{27 - 21}{0 - 1} = \frac{6}{-1} = -6$$

$$y = -6x + 27$$

- B. Use the equation in part A to determine after how many hours there will be zero people at the pool. Show all your work. Explain why you did each step.

There are zero people at the pool when $y = 0$.

$$0 = -6x + 27$$

$$-27 = -6x$$

$$x = \frac{-27}{-6} = \frac{9}{2} = 4.5 \text{ hours}$$

Substituting zero for y and solving for x will give the number of hours there will be zero people at the pool.

- C. Explain what the slope of the graph means in the situation.

The slope is -6 which means the number of people in the pool will decrease 6 for every hour.