NAME _____ DATE _____ PERIOD _____

11 Family Letter

Dear Parent or Guardian:

Linear functions are frequently used to represent real-world situations. It is often helpful to display the information on a graph in order to analyze trends and make predictions. For example, if data represented on a scatter plot can be fitted with a line, then a correlation can be established to answer questions and make predictions.

In **Chapter 11, Algebra: Linear Functions**, your child will learn about functions, to represent linear functions, about slope and direct variation, how to graph linear functions using the slope and y-intercept, to write linear equations, and to use scatter plots, and work with sequences. In the study of this chapter, your child will complete a variety of daily classroom assignments and activities and possibly produce a chapter project.

By signing this letter and returning it with your child, you agree to encourage your child by getting involved. Enclosed is an activity you can do with your child that practices how the math we will be learning in Chapter 11 might be tested. You may also wish to log on to **www.msmath3.com** for self-check quizzes and other study help. If you have any questions or comments, feel free to contact me at school.

Sincerely,

Signature of Parent or Guardian _____ Date _____

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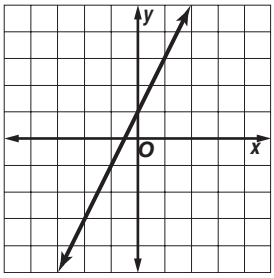
11 Family Activity

State Test Practice

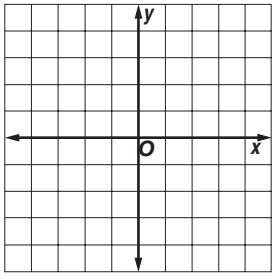
Fold the page along the dashed line. Work each problem on another piece of paper. Then unfold the page to check your work.

1. What is the equation of the line graphed on the coordinate axis shown below?



A $y = 2x$
B $y = x + 1$
C $y = 2x + 1$
D $y = -2x + 1$

2. What is the slope of a line that contains a point at $(1, -2)$ and another point at $(2, 1)$. Use the coordinate axis below to help you.



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

Fold here

Solution

1. *Hint: Slope is the rise over the run of the line and the intercept is the point at which the x-coordinate is zero.*

For this graph, the rise over the run is $\frac{2}{1}$, so the slope is 2. The line crosses the x-axis at the point (0,1), so the intercept is 1.

Using the form of the line:

$$y = mx + b$$

where m is the slope and b is the intercept, our line has the equation

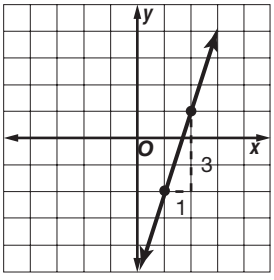
$$y = 2x + 1.$$

The answer is **C**.

Solution

2. *Hint: Graph the two points and draw the line that passes through them. Use the rise and run of the line to find the slope.*

Graph the two points and draw the line through them as shown below.



The rise from the lower point to the higher point is 3 units. The rise is positive because you are moving up. The run, or distance across, is one unit to the right, or 1. The run is positive because you are moving to the right. The rise over the run is $\frac{3}{1}$, so the slope is 3.

The answer is **A**.

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