Algebra 1 **Review: 5.1-5.3** **Name** Key

Find the slope of the line that passes through each pair of points. Describe the line as rising, falling, vertical, or horizontal:

1. $(8,-10)$ $(-8,4)$

Slope $= \frac{-10-4}{8-(-8)} = \frac{-14}{16}$

$= \boxed{\frac{-7}{8}}$

(falling)

2. $(-3,7)$ $(-3,9)$

Slope $= \frac{9-7}{-3-(-3)} = \frac{2}{0}$

$= \boxed{\text{undefined}}$

(vertical)

3. $(-1,-5)$ $(-6,-30)$

Slope $= \frac{-30-(-5)}{-6-(-1)} = \frac{-25}{-5}$

$= \boxed{5}$

(rising)

4. Amy says that to move from point to point using the slope in #1 you have to move down 7 and right 8. What is another way you could move from point to point?

$\boxed{\text{Up 7, Left 8}}$

$\frac{-7}{8} = \frac{7}{-8}$

5. Give two possible points that would produce a slope of $\frac{5}{3}$.

$\boxed{(10,15)(7,10)}$

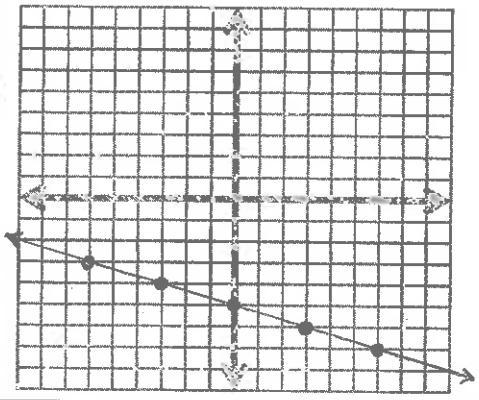
6. If a line has a slope of 5 does (5,1) have to be an ordered pair on the line?

$\boxed{\text{no}}$

7. A line has a slope of $-\frac{0}{6}$. Will the line rise, fall, be horizontal, or vertical?

$\boxed{\text{Horizontal}}$

8. Graph $y = -\frac{1}{3}x - 5$



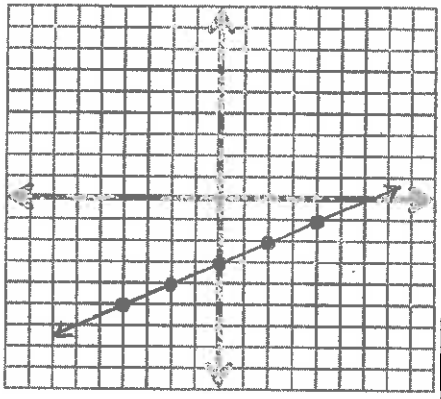
x	y
-6	-3
-3	-4
0	-5
3	-6
6	-7

9. Make a table of values to graph $3x - 6y = 18$

$-6y = -3x + 18$

$y = \frac{1}{2}x - 3$

x	y
-4	-5
-2	-4
0	-3
2	-2
4	-1



10. State the x-intercept, the y-intercept, and the slope for problem #8.

$0 = -\frac{1}{3}x - 5$ $y = -\frac{1}{3}(0) - 5$

$5 = -\frac{1}{3}x$ $y = -5$

$x = -15$ $\boxed{(-15,0)}$ $\boxed{(0,-5)}$

Slope $= \boxed{-\frac{1}{3}}$

11. State the x-intercept, the y-intercept, and the slope for problem #9.

$3(0) - 6y = 18$ $3x - 6(0) = 18$

$-6y = 18$ $3x = 18$

$y = -3$ $\boxed{(0,-3)}$ $x = 6$ $\boxed{(6,0)}$

Slope $= \boxed{\frac{1}{2}}$

Answer the following word problems.

12. You are having a fundraiser dance. Tickets to get into the dance are $5 for children and $7 for adults. To reach your goal, you would like to raise $385.

a). Write an equation for the following situation.

$5x + 7y = 385$

b). Find the x and y intercepts and determine what they represent.

$5(0) + 7y = 385$

$7y = 385$

$y = 55$

$(0, 55)$

You could sell zero children and 55 adults

$5x + 7(0) = 385$

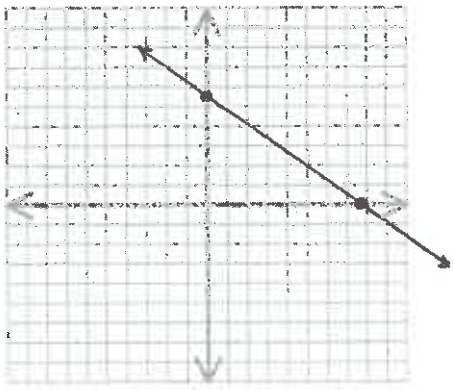
$5x = 385$

$x = 77$

$(77, 0)$

You could sell zero adult and 77 children

c). Sketch a graph using your intercepts. (You will need to make a new scale for your axis). (scaled by 10)



d). Find two other points that are not your intercepts that satisfy the function.

$\text{Slope} = \frac{55-0}{0-77} = -\frac{55}{77} = -\frac{5}{7}$

$(7, 50) \longrightarrow (0.7, 5)$

$(14, 45) \longrightarrow (1.4, 4.5)$

$(21, 40) \longrightarrow (2.1, 4)$

13. Your family spends $30 total for tickets to an aquarium and $3 per hour for parking. Write an equation in that gives the total cost of your trip as a function of the number of hours that you are there.

$f(x) = 30 + 3x$

14. Ocean water levels are measured hourly at a monitoring station. The table shows the water level (in meters) on one particular morning. Complete the second table with the average rates of change in water level and describe changes in the rates throughout the morning.

Time since 12 am	1	3	8	10	(noon) 12
Water level (meters)	2	1.4	0.5	1	1.8

Time span	Rate of change (meters per hour)
Midnight to 1am	2
1am to 3am	-0.3
3am to 8 am	-0.18
10am to noon	0.4

$\frac{2-0}{1-0} = \frac{2}{1} = 2$

$\frac{1.4-2}{3-1} = \frac{-0.6}{2} = -0.3$

$\frac{0.5-1.4}{8-3} = \frac{-0.9}{5} = -0.18$

$\frac{1.8-1}{12-10} = \frac{0.8}{2} = 0.4$