Algebra 1 **Review: 5.1-5.3, 6.1** **Name**_____

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

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

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

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

falling

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

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

undefined

vertical

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

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

$= \frac{-25}{-5}$

rising $m = 5$

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?

Up 7 +8 Left

5. What is the equation of the line in problem #2?

$x = -3$

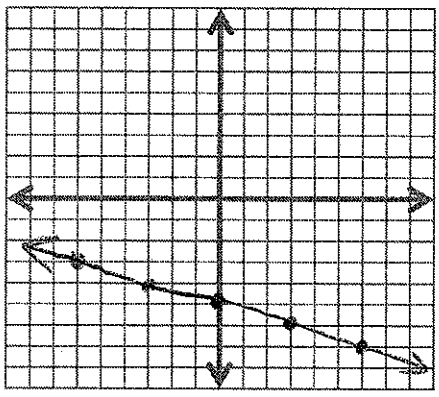
6. If a line has a slope of 5 does (5,1) have to be an ordered pair on the line?

No

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

horizontal

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



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

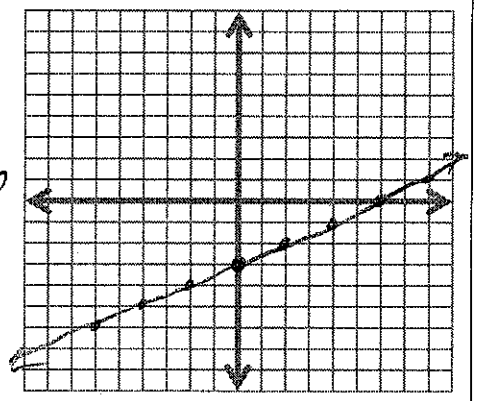
$3x - 6y = 18$

$-3x \quad -3x$

$\frac{-6y}{-6} = \frac{-3x}{-6} + \frac{18}{-6}$

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

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 #11.

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

y-int: (0,-5)

x-int: (-15,0)

$0 = -\frac{1}{3}x + 5$

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

$-15 = x$

11. State the x-intercept, the y-intercept, and the slope for problem #12.

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

y-int: (0,-3)

x-int: (6,0)

$0 = \frac{1}{2}x - 3$

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

$6 = x$

Write the equation of each described line in slope-intercept form:

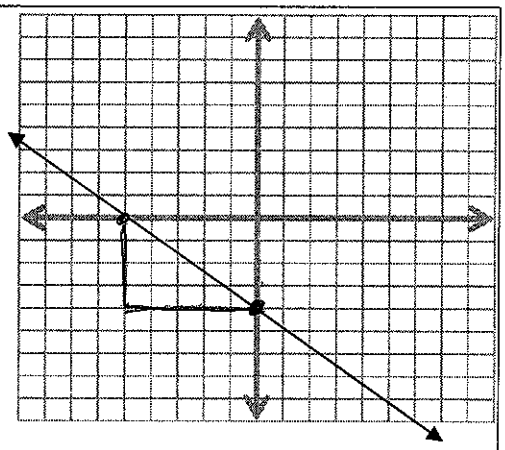
12. $m = -\frac{2}{3}$ $b = -6$

$y = -\frac{2}{3}x - 6$

13. $m = \frac{-4}{5}$

$b = -4$

$y = -\frac{4}{5}x - 4$



14. through $(4,3)$ $(1,-3)$

$m = \frac{-3-3}{1-4} = \frac{-6}{-3} = 2$

$y = 2x + b$

$-3 = 2(1) + b$

$-3 = 2 + b$

$-5 = b$

$y = 2x - 5$

15. $m = \frac{4}{3}$

$y = \frac{4}{3}x + b$

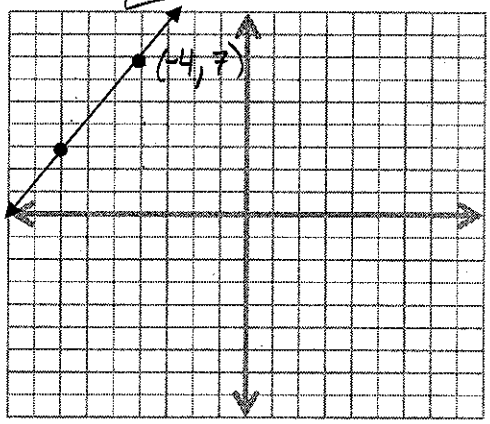
$7 = \frac{4}{3}(-4) + b$

$7 = \frac{-16}{3} + b$

$\frac{21}{3} + \frac{16}{3} = b$

$\frac{37}{3} = b$

$y = \frac{4}{3}x + \frac{37}{3}$



16. satisfies $f(3) = 7$ $f(0) = 8$

$(3,7)$ $(0,8)$ $b = 8$

$m = \frac{8-7}{0-3} = \frac{1}{-3}$

$y = -\frac{1}{3}x + 8$

17. satisfies $g(-4) = -4$ $g(2) = 5$

$(-4,-4)$ $(2,5)$

$m = \frac{-4-5}{-4-2}$

$m = \frac{-9}{-6} = \frac{3}{2}$

$y = \frac{3}{2}x + b$

$5 = \frac{3}{2}(2) + b$

$5 = 3 + b$ $b = 2$

$y = \frac{3}{2}x + 2$

18. 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.

$y = 3x + 30$

How much does it cost for 4 hours?

19. The table below shows Gail's altitude above ground during a rock climb up a cliff. Complete the following table of Gail's average rate of ascent.

Time	Altitude (m)
10:00	0
10:20	22
10:40	30
11:00	33

$m = \frac{22-0}{20} = \frac{22}{20} = \frac{11 \text{ meters}}{10 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hour}} = \frac{66 \text{ meters}}{\text{hour}}$

$m = \frac{30-22}{20} = \frac{18}{20} = \frac{9m}{10 \text{ min}} \cdot \frac{60 \text{ min}}{n} = \frac{54m}{n}$

$m = \frac{33-30}{20} = \frac{3}{20} \cdot \frac{60 \text{ min}}{n} = \frac{9m}{n}$

Time Period	Average rate of ascent (m/h)
10:00-10:20	66
10:20-10:40	54
10:40-11:00	9