 Name: _____

3.5.D3 – POINT-SLOPE FORM OF LINEAR EQUATIONS

Past due on: _____ Period: _____

Let x represent the independent quantity and y represent the dependent quantity. Identify what these variables represent and then write an equation, in point-slope form, to represent each situation.

1. A company's revenue has been increasing by $20 thousand each year. In 2011, the revenue was $730 thousand. The company's revenue is a function of the years after 2000.

   Let x = _____ *&* y = _____

   Identify the given point _____ *and slope* _____.

   Equation: _____

2. A hot-air balloon is descending at a rate of 2.5 meters per second. After 90 seconds, its altitude is 440 meters. The altitude of the hot-air balloon is a function of the time it has been descending.

   Let x = _____ *&* y = _____

   Identify the given point _____ *and slope* _____.

   Equation: _____

3. From 1994 – 2004, the annual sales of a small company increased by $10 thousand per year. In 1997 the annual sales were $97 thousand. The annual sales are a function of the number of years since 1994.

   Let x = _____ *&* y = _____

   Identify the given point _____ *and slope* _____.

   Equation: _____

Define variables and write an expression, in function notation, to represent each situation. *Refer to the 3.2 example "Writing & Solving a Function in Two Variables" in the Chapter 3 Summary.*

4. Mr. Johanssen is a history teacher. He gives his class 50-question multiple choice tests. Each correct answer is worth 2 points, while a half of a point is deducted for each incorrect answer. If the student does not answer a question, that question does not get any points at all. This type of scoring penalizes students for guessing. Write an expression to determine the test score and then use it to determine the score of a student who has 30 correct answers and 5 incorrect answers.

   Let x = _____ *&* y = _____

   Expression: _____ *Student's test score:* _____

Complete the chart to write each equation in all three forms. For the point-slope form of each equation, find the point where the x-value is equal to 3.

	Slope-Intercept Form	Point-Slope Form where $x = 3$	Standard Form
5.	$y = 4x - 2$		
6.		$y + 7 = -(x - 3)$	
7.			$5x + y = 12$

Write the equation of a line that passes through the given points. Simplify, if necessary, to write the equation in slope-intercept form.

8. $m = 0;\ (2, 4)$

9. $m = 2;\ y$ intercept $= 5$

10. $m = -3;\ (6, -14)$

11. $m = -5;\ x$ intercept $= 4$

12. $(-3, -4)$ & $(2, 16)$

13. x intercept $= 5;\ y$ intercept $= 2$

For each line whose equation is given, find the slope, x-intercept, and y-intercept. Then graph the line.

14. $y = \frac{5}{3}x - 4$

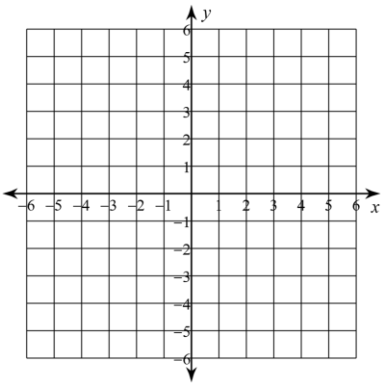
15. $y - 1 = 3(x + 2)$

16. $5x - 10y = 20$

Slope: _____

x-intercept: _____

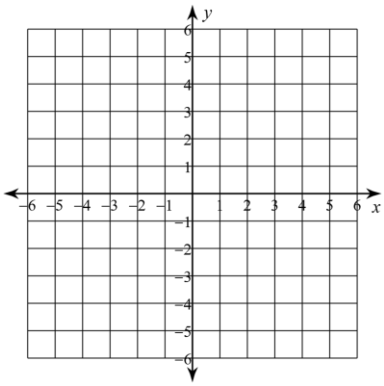
y-intercept: _____



Slope: _____

x-intercept: _____

y-intercept: _____



Slope: _____

x-intercept: _____

y-intercept: _____