# *Chapter 2 Review Worksheet*

Name: _____

A delivery service charges a base price for an overnight delivery of a package plus an extra charge for each pound the package weighs. A customer is billed $22.85 for shipping a 3-pound package and $40 for shipping a 10-pound package.

1. Identify what you have been given (1 point, 2 points, slope, y-int.). List them below.

2. Write an equation in **slope-intercept form** that gives the total cost of shipping a package as a function of the weight of the package.

3. Find the cost of shipping a 15-pound package.

For a school band fundraiser, students are selling seat cushions for $4 each and licenses plate holders for $6 each. One student raises $304.

4. Write an equation in **standard form** of the line that models the possible combinations of seat cushions and license plate holders that the student sold.

5. If the student sold 19 seat cushions, how many license plate holders must they have sold?

6. Write an equation of a line in **slope-intercept form** that is perpendicular to $2x + 7y = 14$ and passes through $(-4, -1)$.

7. Identify the domain and range of the graph.
   Does the graph represent a function? *Explain* how you know.
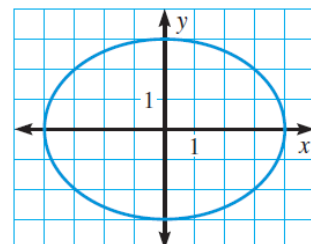
8. Without graphing, compare the graph of $y = -\frac{1}{4}|x + 9| - 5$ to the graph of $y = |x|$.

A cable company charges $44 per month for basic service. Each premium channel costs an additional $16 per month.

9. Write an equation in **slope-intercept form** that gives the total cost (in dollars) of cable each month as a function of the number of premium channels purchased.

10. Identify the dependent and independent variables in this situation.

11. Find the cost of cable service for a month in which you purchase 4 premium channels.

During the period 1990-2004, the annual sales of a small company increased by the same amount each year. In 1997, the annual sales were $97,000. By 2002, sales had increased to $147,000.

12. Write a linear equation in **slope-intercept form** that models the annual sales as a function of the number of years since 1990.

13. Use the model to predict the sales in 2016.

A BMX race track charges a one time membership fee and an entrance fee per race. One racer paid a total of $76 after 3 races. Another racer paid a total of $124 after 7 races.

14. Write an equation in **slope-intercept form** that gives the total cost, C, as a function of the number or races entered, r.

15. What is the entry fee per race?

16. How much does the track membership cost?