Algebra 1: Word Problems **Name** _____ **Period** _____
Writing Equations in Standard and Slope-Intercept Form

Define the variables and write the system of equations for each problem situation. Do not solve!

1. Sur La Table offers a membership to take cooking classes for an initial fee of $60 plus $20 for each lesson. Williams-Sonoma offers a membership to take cooking classes for an initial fee of $15 plus $35 for each lesson.

   x = _____

   y = _____

   Equation 1: _____

   Equation 2: _____

2. The National Honor Society at Hoover High School and Spain Park are taking field trips to Atlanta, GA. A total of 516 students from HHS will be going in 6 vans and 7 buses. A total of 408 students from SPHS will be going in 3 vans and 6 buses. Each van has the same number of passengers and each bus has the same number of passengers.

   x = _____

   y = _____

   Equation 1: _____

   Equation 2: _____

3. Hoover High School's cheerleaders need to raise money for their trip to Orlando, FL for the National High School Cheerleading Competition. The ladies decide to bake cookies and sell them during lunch. It costs $75 to buy all the ingredients. Mr. Hulin wants a cut of the profits so the cheerleaders have to pay him $1 for each cookie sold. The girls sell their cookies for $1.50 each.

   x = _____

   y = _____

   Equation 1: _____

   Equation 2: _____

Reflection

A. Which one is a break-even problem? _____

a. How do you know? _____

_____

b. Are the equations written in standard or slope-intercept form?

Circle one: $Ax + By = C$ $y = mx + b$

B. For which problem are the equations written in standard form, $Ax + By = C$? _____

a. What does the value of C represent? _____

_____

b. Why are the equations written in standard form? _____

_____

C. Are the equations for problem #1 written in standard or slope-intercept form?

Circle one: $Ax + By = C$ $y = mx + b$

a. Why would you choose that format? _____

_____

_____

Answer Key

Define the variables and write the system of equations for each problem situation. Do not solve!

1. Sur La Table offers a membership to take cooking classes for an initial fee of $60 plus $20 for each lesson. Williams-Sonoma offers a membership to take cooking classes for an initial fee of $15 plus $35 for each lesson.

   x = number of lessons

   y = total cost of each membership

   $y = 60 + 20x$

   $y = 15 + 35x$

2. The National Honor Society at Hoover High School and Spain Park are taking field trips to Atlanta, GA. A total of 516 students from HHS will be going in 6 vans and 7 buses. A total of 408 students from SPHS will be going in 3 vans and 6 buses. Each van has the same number of passengers and each bus has the same number of passengers.

   x = number of students riding in each van

   y = number of students riding in each bus

   $6x + 7y = 516$

   $3x + 6y = 408$

3. Hoover High School's cheerleaders need to raise money for their trip to Orlando, FL for the National High School Cheerleading Competition. The ladies decide to bake cookies and sell them during lunch. It costs $75 to buy all the ingredients. Mr. Hulin wants a cut of the profits so the cheerleaders have to pay him $1 for each cookie sold. The girls sell their cookies for $1.50 each.

   x = number of cookies

   y = total cost/expenses and total income

   $y = 75 + 1x$ or $75 + x$

   $y = 1.50x$

Reflection

D. Which one is a break-even problem? #3

   a. How do you know? The problem talks about the costs of making cookies versus the income generated by selling the cookies.

   b. Are the equations written in standard or slope-intercept form?

      Circle one: $Ax + By = C$ $y = mx + b$

E. For which problem are the equations written in standard form, $Ax + By = C$? #2

   a. What does the value of C represent? The total number of students at each high school going on the field trip

   b. Why are the equations written in standard form? The problem specifies a total amount. This is a set constant and will be "C" value in the standard form of an equation.

F. Are the equations for problem #1 written in standard or slope-intercept form?

   Circle one: $Ax + By = C$ $y = mx + b$

   a. Why would you choose that format? The problem specifies a rate with its reference to the word "each" and an initial amount or flat fee. The rate represents the slope of the line and the initial amount or flat fee is the y-intercept.