

7.4: Applications
“I WILL ...
Solve Systems of Applications.”

I. Writing Equations

A. Slope-intercept:

1. Equation: _____
2. There is a _____ relationship between your variables

B. Standard Form:

1. Equation: _____
2. Deals with the slope and y-intercept
3. There is _____ relationship between your variables

II. Steps

- A. Identify the two things you are trying to find and label them properly.
- B. Write _____ equations using both variables.
- C. Use either linear combination or substitution to solve for the missing variables.

III. Model Problems

<p>Ex 1: Write an equation in Slope-Intercept form for “Roy went to the game and it cost \$20 for the ticket and \$5 for snacks.”</p>	<p>Your Turn: Write an equation in Slope-Intercept form for “You are working at a Sales Job. You charge your clients \$55 per hour plus a flat fee of \$150.”</p>	
<p>Ex 2: Write an equation in Standard Form for “Roy went to the game and it cost \$20 for each ticket and \$5 for snacks. It had cost him a total of \$100.” X stands for tickets and Y stands for snacks.</p>	<p>Ex 3: Write a system of equations in Standard Form for “You are at a restaurant. You have two choices to choose from. One is to charge you \$7 per entrée and \$2 per refill on drinks for a total of \$25. The other is to charge \$7 per entrée and charge you \$1 per refill on drinks for a total of \$25.”</p>	<p>Your Turn: Write an equation in Standard Form for “Janine charges \$10 per kid and \$5 per hour to babysit. She had made a total of \$54.” X stands for each kid and Y stands for each hour of babysitting.</p>

<p>Ex 4: Larry bought 2 burgers and 1 taco for \$9.00. Curly bought 3 burgers and 2 tacos for \$16.00. Write a system of equations so they know how much each item was worth.</p>	<p>Ex 5: The senior classes at HSPVA and Vanguard planned separate trips to New York City. The senior class at HSPVA rented and filled 1 van and 6 buses with 372 students. Vanguard rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?</p>
<p>Your Turn: The theater department is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of one senior citizen ticket and one child ticket?</p>	<p>Ex 6: I have 10 coins in my hand that are either nickels or dimes. The nickels and dimes are worth a total of \$0.80. Determine the number of nickels and dimes you have.</p>
<p>Ex 7: Laura has \$4.50 in dimes and quarters. She has 3 more dimes than quarters. How many quarters does she have?</p>	<p>Your Turn: Tamar has four more quarters than dimes. If he has a total of \$1.70, how many quarters and dimes does he have?</p>

<p>Ex 8: The sum of two numbers is 43. The second number is 1 more than 2 times the first. What are the two numbers? Show all work to earn full credit.</p>	<p>Ex 9: The larger of two numbers is 7 more than 5 times the other. The sum is 55. Find the two numbers.</p>
<p>Ex 10: The perimeter of a rectangle is 20 inches. The length of the rectangle is one more than twice its width. What is the length of the triangle?</p>	<p>Ex 11: The Lopez family had a rectangular garden with a 20 foot perimeter. They enlarged their garden to be twice as long and three feet wider than it was originally. They had to, since their cherry tomato plants were getting out of control. The enlarged garden has a 40 foot perimeter. What were the dimensions of the original garden?</p>
<p>Your Turn: The perimeter of a rectangle is 36 meters. If the widths were doubled and the lengths were increased by 11 meters, the perimeter would be 70 meters. What are the length and width of the rectangle?</p>	