

## Setting up and Solving Systems of Equations

- 1) Decide whether each situation represents a Standard Form or Slope Intercept form.  $y = mx + b$  or  $Ax + By = C$
- 2) Define the variables (unknowns)

1) Rebecca has 45 coins, all nickels and dimes. The total value of the coins is \$3.60. How many of each type of coin does Rebecca have?

STANDARD       $x$ : # of NICKELS       $y$ : # of DIMES

Equations:  $x + y = 45$  (total #)

• Substitution  
(solve for a variable)

$.05x + .10y = 3.60$  (total value) • Elimination

2) Bowl-o-Rama charges \$2.50 per game plus \$2.00 for shoe rental. Bowling Pinz charges \$2.00 per game plus a \$4.00. When is the cost the same to bowl at both places?

Slope-Intercept

$x$ : # of games       $y$ : total cost

Equations:  $y = 2.50x + 2.00$

$y = 2.00x + 4.00$

• Graph  
• Substitution

$2.5x + 2 = 2x + 4$

3) The bill for 5 glasses of apple juice and four salads is \$9.50 but the bill for four glasses of apple juice and five salads is \$10.30. What would be the bill for 1 glass of apple juice and one salad?

STANDARD

$x$ : # of AJ

$y$ : # of S

Equations:  $5x + 4y = 9.50$

$4x + 5y = 10.30$

a) The Bowie Baseball Team is selling hats as a fundraiser. They contacted 2 companies. Hats Off charges \$12 per hat. Top Stuff charges a \$15 design fee and \$9 per hat. For what number of hats will it be more expensive to use Hats Off?

$$y = 12x$$

$$y = 9x + 15$$

x: # of hats

y: total cost

c) Kerry asked a bank teller to cash a \$390 check using \$20 bills and \$50 bills. If the teller have her a total of 15 bills, how many of each type of bill did she receive?

$$x + y = 15$$

$$50x + 20y = 390$$

x: # of 50's

y: # of 20's

d) The junior and senior class at H. Frank Carey High School planned separate trips to New York City. The senior class rented 1 van and 6 buses for 372 students. The junior class used 4 vans and 12 buses for 780 students. How many students can a van carry? How many students can a bus carry?

$$x + 6y = 372$$

$$4x + 12y = 780$$

x: # of students in bus

y: # of students in van

**GLUE HERE**