Alg 2
Unit 2 Review
Linear Equations, Systems & Inequalities

5. Solve this system of inequalities

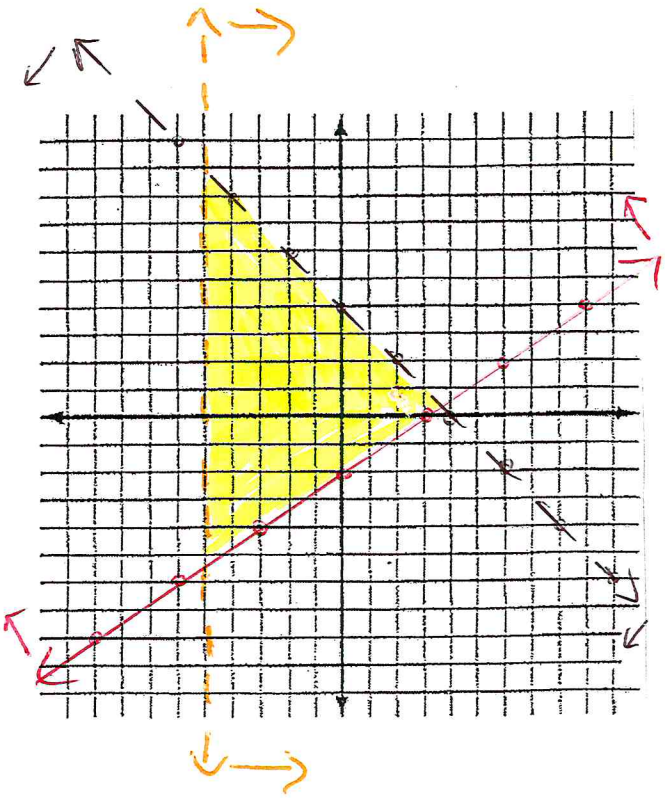
$x + y < 4$
$2x - 3y \leq 6$
$x > -5$

$y < -x + 4$ --- shade under

---- shade right

$2x - 3y \leq 6$
$-2x \quad -2x$
$-3y \leq -2x + 6$
-3

$y \geq \frac{2}{3}x - 2$ ⟷ shade above



For 6 & 7, use our 4 step process to write and solve a system of equations.

6. Nadine has 16 coins in her change purse, with a value of $1.25. How many of each coin does she have?

Nickels + dimes only!

n = # of nickels
d = # of dimes

$n + d = 16$
$.05n + .10d = 1.25$ or

$(n + d = 16) \cdot 5$
$5n + 10d = 125$

$-5n + 5d = 80$
$5n + 10d = 125$

$5d = 45$
$5 \quad 5$
$d = 9$

$n + 9 = 16$
$n = 7$

Nadine has 9 dimes and 7 nickels

7. A student can make a weekly salary of $200, plus a 15% commission on sales at Radio Barn, or a weekly salary of $300 plus a 10% commission on sales at Woofers, Inc. For what amount of sales would the jobs pay the same? What is the amount they would earn?

A = sales
P = pay earned

Radio Barn: $P = .15A + 200$
Woofers, Inc: $P = .10A + 300$

$.15A + 200 = .10A + 300$
$-.10A \qquad -.10A$

$.05A + 200 = 300$
$-200 \quad -200$

$.05A = 100$
$.05 \quad .05$

$A = 2000$

$P = .10(2000) + 300$
$P = 200 + 300 = 500$

If they sold $2000 worth of merchandise, they would earn $500