Algebra 2   Bellwork   Monday, October 26, 2015

1. Without graphing state the number of solutions to this system of linear equations.

$6x - 8y = 24$

$15x - 20y = 40$

2. In her purse Amani has $100. There are only $5 bills and $10 bills. There is a total 14 bills. Write and solve a system of equations in order to find the number of $5 bills and $10 bills in her purse.

Equations: # $5 bills: # $10 bills:

3. Graph each system of inequalities. Shade the solution region a different color than either of the original inequalities.
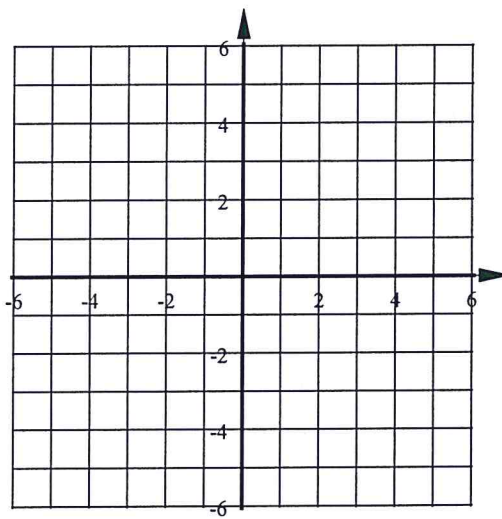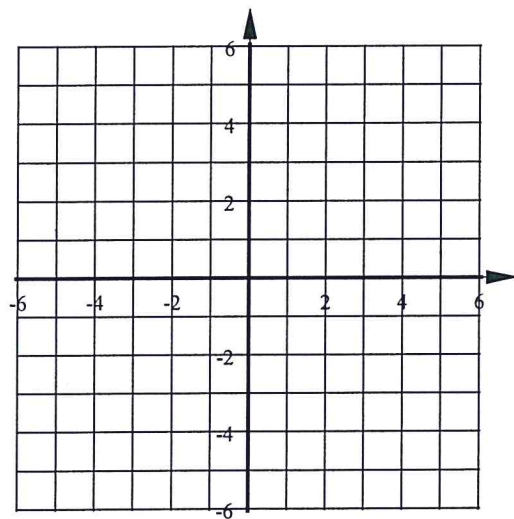
a)

$y < -2x$

$12x - 16y \geq 48$

b)

$y < -2|x - 1| + 4$

$y \geq \frac{1}{2}x - 2$

1. Without graphing state the number of solutions to this system of linear equations.

$6x - 8y = 24$
$15x - 20y = 40$

NO SOLUTION

$\boxed{6x - 8y = 24}$

$\dfrac{-8y = 24 - 6x}{-8}$

$y = -3 + \tfrac{3}{4}x$

Lines are parallel

$\boxed{15x - 20y = 40}$

$\dfrac{-20y = 40 - 15x}{-20}$

$y = -2 + \tfrac{3}{4}x$

2. In her purse Amani has $100. There are only $5 bills and $10 bills. There is a total 14 bills. Write and solve a system of equations in order to find the number of $5 bills and $10 bills in her purse.

Equations:

$F = \#\ ^{\$}5$ bills
$T = \#\ ^{\$}10$ bills

$F + T = 14$
$5F + 10T = 100$

A
B
$\begin{bmatrix} 1 & 1 \\ 5 & 10 \end{bmatrix} \begin{bmatrix} 14 \\ 100 \end{bmatrix}$

$A^{-1} \cdot B = (8, 6)$

# $5 bills:	# $10 bills:
8	6

3. Graph each system of inequalities. Shade the solution region a different color than either of the original inequalities.

a)
$y < -2x$ ✶
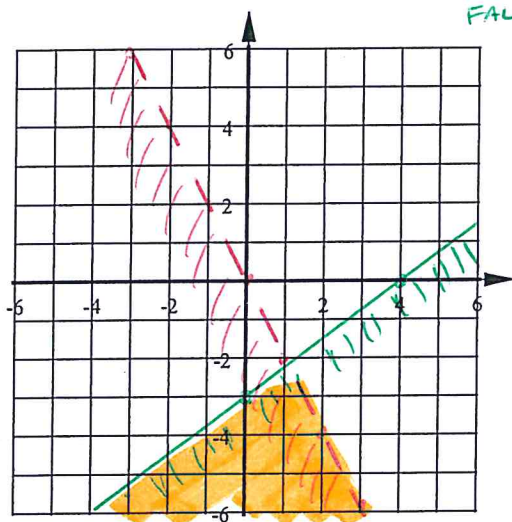$12x - 16y \geq 48$ ✶

x-int = 4
y-int = -3

TEST
(0,0)
$0 \geq 48$
FALSE

b)
$y < -2|x - 1| + 4$ ✶
$y \geq \tfrac{1}{2}x - 2$ ✶

left 4 up opens down

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