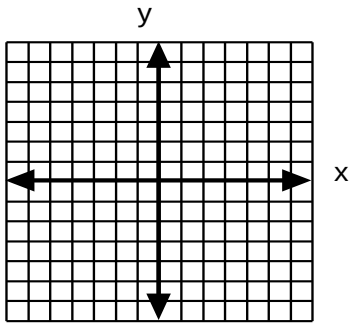
N:_____ D:_____ P: 1 2 3 4 5 6

Algebra 2: **Topic 3: Review Worksheet A** *Mission Hills Math 2013*

► **Directions: No Calculators. Use scratch paper to show your work.**

1) Solve the system $\begin{cases} -x+3y=4 \\ y=-2x-1 \end{cases}$ by graphing. Approximate the intersection point.



2) How many solutions do each of the following systems have:

A) $\begin{cases} 4x-2y+5=0 \\ y-2x=3 \end{cases}$ B) $\begin{cases} y=-x+7 \\ 3x+3y=21 \end{cases}$ C) $\begin{cases} y=-\frac{1}{4}x+1 \\ 8y=2x+8 \end{cases}$

3) Which of the following points is a solution to the system: $\begin{cases} 2x+y=-1 \\ 3x-4y=15 \end{cases}$

A) (2, -5) B) (1, -3) C) (-1, 1) D) (-1, -3)

4) Solve each of the following systems for x and y, if possible. Use either the substitution or addition method. Show your work.

A) $\begin{cases} 2x+y=7 \\ -2x+3y=5 \end{cases}$ B) $\begin{cases} -3x+4y=-8 \\ x+3y=7 \end{cases}$ C) $\begin{cases} x-4y=6 \\ 2x-8y=12 \end{cases}$

D) $\begin{cases} 5x-10y=-5 \\ x=y+2 \end{cases}$ E) $\begin{cases} 17x+18y=1 \\ 7x+18y=11 \end{cases}$ F) $\begin{cases} 3x-2y=12 \\ y=2x-7 \end{cases}$

G) $\begin{cases} 10x-5y=5 \\ 3x-2y=4 \end{cases}$ H) $\begin{cases} 3x+9y=2 \\ x=1-3y \end{cases}$

► **For problems 5-8, set up the heading and the system of two equations only. Do not solve.**

5) The sum of two numbers is 35. The larger number is 15 more than the smaller number. What are the numbers?

6) Tim has quarters and dimes in his toy bank. He has a total of 20 coins with a total value of $3.20. How many coins of each kind does he have?

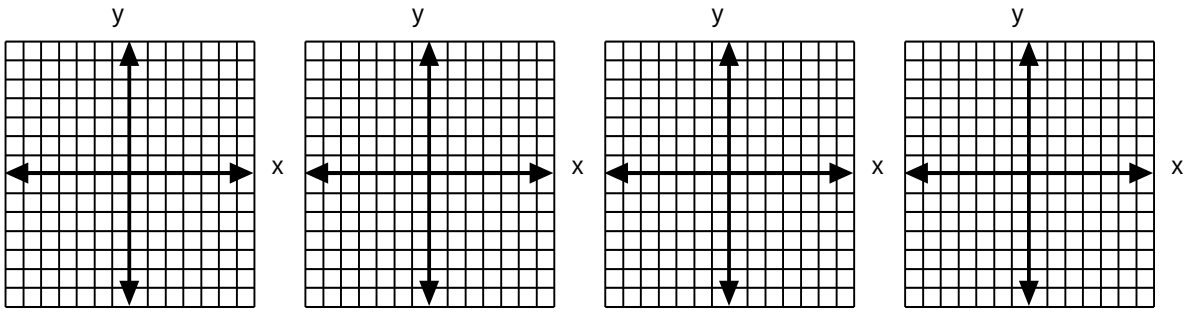
► **For problems 9-10, set up the heading and the system of two equations. Then solve.**

9) Dan spends $22 to buy a total of 10 hamburgers - some regular and some deluxe. If deluxe hamburgers cost $3 each and regular hamburgers cost $2 each, how many deluxe hamburgers did Dan buy?

10) For a wedding, Maria bought several bundles of roses and several bundles of carnations. The roses cost $12 per bundle, and the carnations cost $5 per bundle. Maria bought a total of 8 bundles of flowers and paid a total of $75. How many bundles of roses did she buy?

11) Solve the following systems of inequalities by graphing.

A) $\begin{cases} 2x - y \geq 6 \\ y < -x + 1 \end{cases}$ B) $\begin{cases} -3x + y < 2 \\ y < -\frac{1}{2}x \end{cases}$ C) $\begin{cases} x + 2y \leq 4 \\ y \geq x - 1 \\ x \geq -2 \end{cases}$ D) $\begin{cases} x \leq 3 \\ y \geq -1 \\ y \leq x \end{cases}$



13) Solve the following systems of equations for the specified variable, if possible. Show your work

A) $\begin{cases} x + 2y - z = 17 \\ y + z = 1 \\ 3z = -9 \end{cases}$

x = _____

B) $\begin{cases} x + 2y - 5z = 5 \\ 3x - y - z = 15 \\ 4x + 2y = 4 \end{cases}$

x = _____

C) $\begin{cases} x + 2y = 0 \\ x + z = -1 \\ y - z = 2 \end{cases}$

y = _____

D) $\begin{cases} x - y + 3z = 8 \\ 2x + 4y + z = 0 \\ 3x + y - 2z = -2 \end{cases}$

z = _____

E) $\begin{cases} 3x - y + z = 5 \\ 2x + y - 2z = -2 \\ -6x + 2y - 2z = -10 \end{cases}$

y = _____

F) $\begin{cases} 2x - y + 3z = 8 \\ x - 6y - z = 0 \\ -6x + 3y - 9z = 24 \end{cases}$

z = _____