Solving Systems of Equations by Elimination

In order to _____ on of the _____, you must have the same _____ for that variable but with _____.

Steps	Example: $5x + y = 9$ $10x - 7y = -18$
1) Align like-variables so that they are on top of each other (if necessary)	
2) Check to see if one of the variables can cancel – if so, skip to step 5	
3) Determine which variable would be easiest to cancel	
4) Multiply one (or both) of the equations by a # (or #s) so that one of the variables will cancel (so they will have the same coefficient but with opposite signs)	
5) Add the 2 equations together	
6) Solve for the variable that did NOT cancel	
7) Take the variable you solved for from step 6 and plug it into one of the original equations. Then solve for the remaining variable	
8) State solution as an ordered pair	

Examples:

1) $2x - 2y = -8$
    $2x + 2y = 4$

2) $3x + 2y = 7$
    $-3x + 4y = 5$

3) $-6x - 5y = -4$
    $-7y + 6x = -20$

4) $4x + 10y = -4$
    $-10y + 25x = 120$

5) $8x + y = -16$
    $-3x + y = -5$

6) $-4x + 9y = 9$
    $-3y + x = -6$

Solving Systems of Equations by Elimination Practice

Solve each system by elimination.

1) $8x - 4y = -20$
     $8x + 4y = 4$

2) $10x - 2y = 2$
     $-10x + 7y = 18$

3) $-6x - y = -21$
     $6x + 2y = 24$

4) $3x + 2y = 5$
     $3x + 9y = -9$

5) $-6x + 8y = -30$
     $5x + 8y = -19$

6) $3x - 7y = -4$
     $x - 7y = -6$

7) $5x + 2y = 30$
$-15x + 6y = 30$

8) $-10x - 2y = 21$
$20x + 4y = -28$

9) $6x - 8y = -22$
$-2x - 16y = 26$

10) $7x - 6y = -18$
$9x - 5y = 4$

11) $-5x + 6y = -23$
$-4x + 7y = -14$

12) $-4x + 20y = 8$
$-10x + 50y = 20$

Solving Systems of Equations – Matching

Solve the following using any method. Once you solve each system, record the letter that corresponds to the answer in the blank provided. Each answer will only be used once. There are blank graphs provided if you wish to graph.

Answers:

A: $(24, 3)$　　　B: $(8, 4)$　　　C: $(12, 17)$　　　D: No Solution　　　E: $(2, 1)$　　　F: $(3, 5)$

G: $(8, 2)$　　　H: $(-6, -1)$　　　I: $(4, 1)$　　　J: Infinitely Many Solutions

1)　$x - 2y = 0$　　Answer: _____
　　$2x - 5y = -4$

2)　$y = 8 - x$　　Answer: _____
　　$4x - 3y = -3$

3)　$y = x + 5$　　Answer: _____
　　$y = 2x - 7$

4)　$x + y = 3$　　Answer: _____
　　$2x + 2y = 6$

5)　$x + 3y = 14$　　Answer: _____
　　$-5x + 6y = -28$

6)　$-2x + 6y = 6$　　Answer: _____
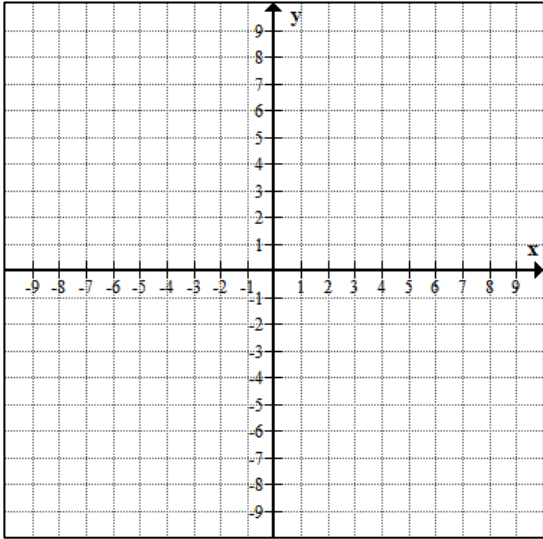　　$y = 2x + 11$

7)　$x = 8y$　　Answer: _____
　　$x - 4y = 12$

8)　$4x - y = 7$　　Answer: _____
　　$5x - 8y = 2$

9)　$y = 2x - 3$　　Answer: _____
　　$-2x + y = 6$

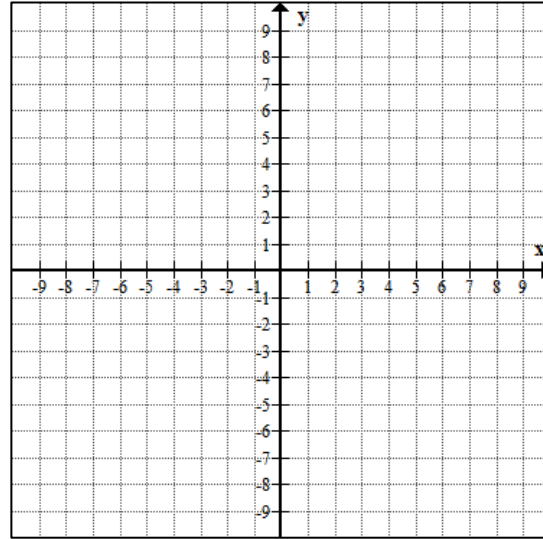10)　$-3x - y = -13$　　Answer: _____
　　$x + 2y = 6$

If you decide to use a graph, please number them.
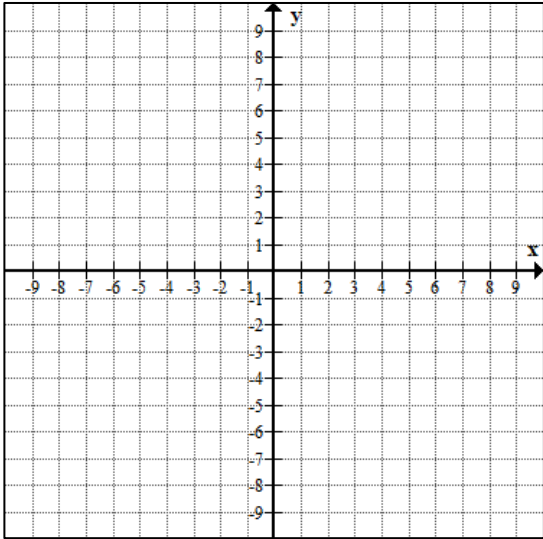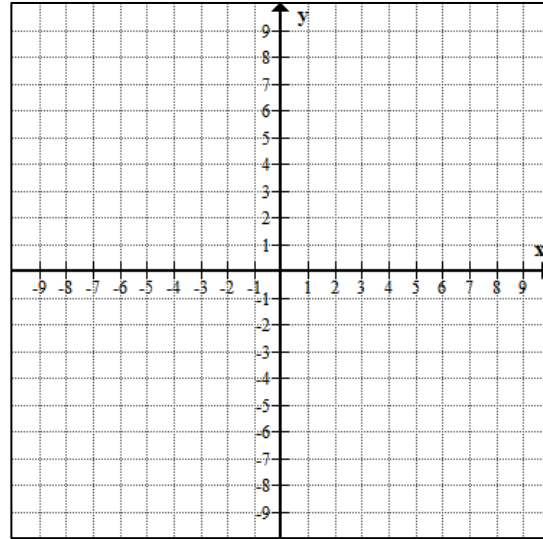
#_____

#_____

#_____

#_____

Extra Room for Scratch Work: