Algebra I

7-4
Solving Systems:
Linear Transformations

Solve each system.

1) $2x + y = 8$ **2**
$3x - 2y = 5$

Multiply the first equation by 2 so the ys are opposite and will cancel when the equations are added.

$$4x + 2y = 16$$
$$3x - 2y = 5$$
$$\frac{7x}{7} = \frac{21}{7}$$

$$x = 3$$

Then substitute the answer for x back into one of the original equations to find the y value.

$$2(3) + y = 8$$
$$6 + y = 8$$
$$y = 2$$
$$\{(3, 2)\}$$

We have to multiply both equations by a number to get the q coefficients to be 10 and -10, thus canceling them out when adding.

2) $5p - 2q = 1$ **5**
$4p + 5q = 47$ **2**

$$25p - 10q = 5$$
$$8p + 10q = 94$$
$$\frac{33p}{33} = \frac{99}{33}$$
$$p = 3$$

$$5(3) - 2q = 1$$
$$-15 + 15 - 2q = 1 - 15$$
$$\frac{-2q}{-2} = \frac{-14}{-2}$$
$$q = 7$$

$$\{(3, 7)\}$$

Assignment:
pg. 454
4-32 even,
37-40 all.