Systems Quiz

1. Draw the graph of each of the following equations using any of the following procedures: (table of values, x & y intercepts or point slope)

$$4x + y = -8$$
$$2x - 3y = 6$$

4x + y = -8

2x - 3y = 6

x-intercept (-8, 0)

x-intercept (3, 0)

Approximation of Solution Set

(-1 1/3, -2 4/5)

y-intercept (0, -2)

(y-intercept (0, -8)
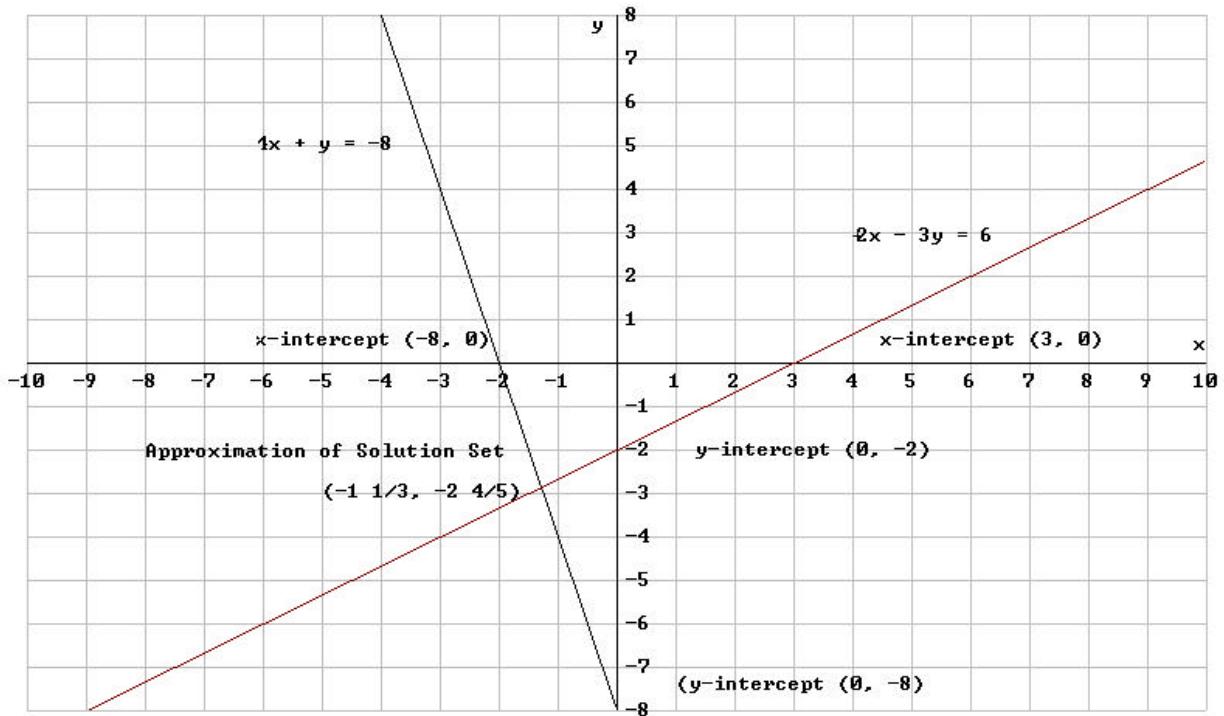
2. Solve each of the following systems by the indicated method:
   a) addition and subtraction

$$4x + 2y = 18$$
$$5x - 4y = 3$$

$$-5(4x + 2y = 18)$$ $$4x + 2(3) = 18$$ or $$4x + 2\left(\frac{78}{26}\right) = 18$$

$$4(5x - 4y = 3)$$ $$4x + 6 = 18$$

$$4x = 12$$ $$(26) * 4x + 2\left(\frac{78}{26}\right) * (26) = 18 * (26)$$

$$-20x - 10y = -90$$ $$x = 3$$

$$20x - 16y = 12$$ $$104x + 154 = 468$$

$$104x = 314$$

$$-26y = -78$$ $$x = \frac{314}{104} = 3$$

$$y = \frac{-78}{-26} = \frac{78}{26} = 3$$
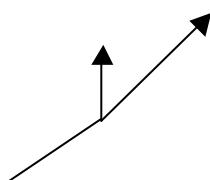
Check $$5(3) - 4(3) = 3$$

$$15 - 12 = 3$$

$$3 = 3$$

Solution Set {(3,3)}

b) substitution

$$-2x + 3y = -5$$
$$5x - 3y = 17$$

$\longrightarrow$

$$-2x = -3y - 5$$
$$x = \frac{-3y - 5}{-2}$$

$$x = \frac{-3(1) - 5}{-2}$$
$$x = \frac{-3 - 5}{-2} = \frac{-8}{-2}$$
$$x = 4$$

$$5\left(\frac{-3y - 5}{-2}\right) - 3y = 17$$

$$(-2) * 5\left(\frac{-3y - 5}{-2}\right) - 3y * (-2) = 17 * (-2)$$

$$-15y - 25 + 6y = -34$$

$$-9y = -9$$

$$y = 1$$

Check :

$$5(4) - 3(1) = 17$$
$$20 - 3 = 17$$
$$17 = 17$$

Solution Set $\{(4,1)\}$