

Solve each problem completely. Show all work!

Solve for each equation for the specified variable.

1.) a.) $5x + 3y = 15$ for y .

$$3y = -5x + 15$$

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

c.) $6 - 2(q - 3p) = 4p$ for p

$$6 - 2q + 6p = 4p$$

$$6 - 2q = -2p$$

$$-3 + q = p$$

Solve each equation.

2.) a.) $\frac{3}{4}x = 60$

$$3x = 240$$

$$x = 80$$

c.) $\frac{3x+1}{2} = 5$

$$3x + 1 = 10$$

$$3x = 9$$

$$x = 3$$

e.) $\frac{1}{3}x + \frac{1}{4}x = 4$

$$\frac{12}{3}x + \frac{12}{4}x = 48$$

$$4x + 3x = 48$$

$$7x = 48$$

$$x = 6.85$$

g.) $\frac{5x}{3} - \frac{5x}{5} = 3$

$$\frac{15x}{3} - \frac{15x}{5} = 45$$

$$5x - 3x = 45$$

$$2x = 45$$

$$x = 22.5$$

b.) $2l + 2w = p$ for w

$$2w = p - 2l$$

$$w = \frac{1}{2}p - l$$

d.) $y = \frac{1}{4}x + 1$ for x

$$y - 1 = \frac{1}{4}x$$

$$4y - 4 = x$$

b.) $\frac{-8}{3}m = 6.3$

$$-8m = 18$$

$$m = -2.25$$

d.) $\frac{5}{3}m - \frac{5}{5}m = \frac{15}{5}$

$$\frac{5m}{3} - \frac{30}{5}m = \frac{15}{5}$$

$$5m - 6m = 3$$

$$-m = 3$$

$$m = -3$$

f.) $\frac{10}{2}x + \frac{x-3}{5} = 3$

$$\frac{10x}{2} + \frac{10x-30}{5} = 30$$

$$5x + 2x - 6 = 30$$

$$7x - 6 = 36$$

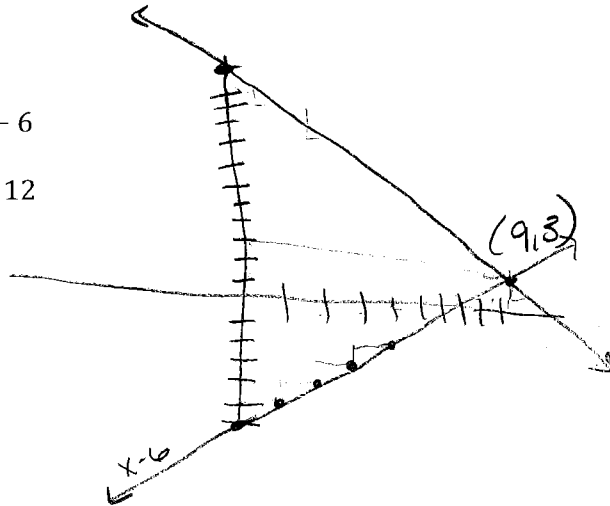
$$7x = 36$$

$$x = 5.14$$

Find the point of intersection for each system of equations. If you need graph paper please let me know!

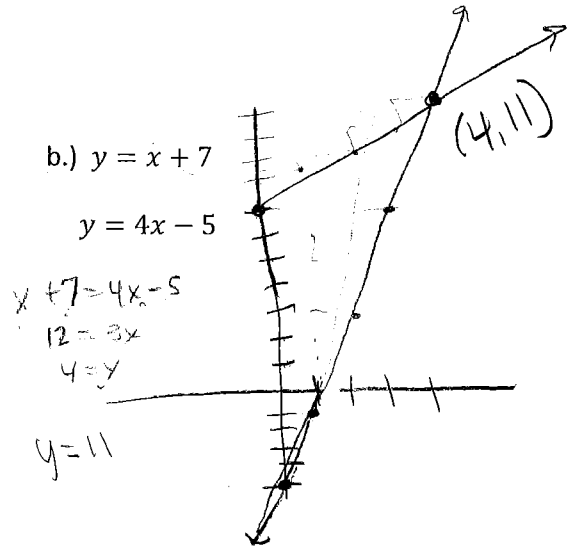
3.) a.) $y = x - 6$

$$\begin{aligned} x - 6 &= -x + 12 & y &= -x + 12 \\ 2x &= 18 \\ x &= 9 \\ y &= 3 \end{aligned}$$



b.) $y = x + 7$

$$\begin{aligned} y &= 4x - 5 \\ x + 7 &= 4x - 5 \\ 12 &= 3x \\ 4 &= y \\ y &= 11 \end{aligned}$$



c.) Larry and his sister, Betty, are saving money to buy their own laptop computers. Larry has \$215 and can save \$35 each week. Betty has \$380 and can save \$20 each week. When will Larry and Betty have the same amount of money?

$$L = 35x + 215$$

$$B = 20x + 380$$

$$35x + 215 = 20x + 380$$

$$15x = 165$$

$$x = 11$$

11 weeks they both will have the same amount of money.