Math 6: Homework 2.10

Systems of linear equations

1)Solve the equations:

a. $2x(x-1) = 2(x^2-5)$

b. $\frac{1}{6}x - \frac{2}{9}(x+5) = -\frac{1}{18}(x-1)$

c. $3x^2 - (3x+2)(x-1) - (x+2) = 0$

2)Solve the system:

$$\begin{cases} 5x + 2y = 16 \\ 2x + 3y = 13 \end{cases}$$

3) Solve the system:

$$\begin{cases} \frac{5}{6}x - \frac{9}{10}y = -2 \\ \frac{1}{3}x + \frac{2}{5}y = 3 \end{cases}$$

4) Solve the system:

$$\begin{cases} 2(x+1) + 3(y-1) = 9 \\ 3(x+2) - 2(y+1) = 6 \end{cases}$$

5) The sum of two numbers is $\frac{41}{35}$ and the difference is $\frac{1}{35}$. What are the two numbers?

6) A tank can be filled in 10 minutes from faucet A at a rate of 50ml/s. If another faucet B is turned on when the tank is one-third full, it will take another 4 minutes and 10 seconds to fill the tank. Find the flow of water from faucet B.