MATH 6: HW 25
SYSTEMS OF LINEAR EQUATIONS

1. Solve the following system of linear equations:

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

2. Solve the following system of linear equations:

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

3. Solve the following system of linear equations:

$$2(x+1) + 3(y-1) = 9$$
$$3(x+2) - 2(y+1) = 6$$

4. The sum of two numbers is 27. Twice the larger number is 11 less than 3 times the smaller number. What are the two numbers?

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

6. A 2-digit number is larger by 9 than the number with the digits reversed. The sum of the digits is 7. Find the number. **Hint:** One can always write $54 = 5 \times 10 + 4$.

7. After paying a 30% tax on a property sold, three businessmen shared the amount left in the ratio $3 : 2 : 2$. If the businessman whose share was the largest received $21,000\$$, how much was the property worth before paying the tax?

8. A motor boat can travel 45 miles downstream in 3 hours and 22 miles upstream in 2 hours. Find is the speed of the boat in still water and find the speed of the current. (Hint: speed=distance/time)

9. 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.