Math 60/80 "Solving Linear systems by substitution"

Solve the system by substitution.

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

2) $\begin{cases} -2x + 5y = 7 \\ x = 3y - 4 \end{cases}$

3) $\begin{cases} x + y = -7 \\ 2x - y = -2 \end{cases}$

4) $\begin{cases} 5x + 2y = -5 \\ 3x - y = -14 \end{cases}$

5) $\begin{cases} 3x + 2y = 4 \\ 3x + y = \frac{9}{2} \end{cases}$

6) $\begin{cases} x - 5y = 3 \\ -2x + 10y = 8 \end{cases}$

7) $\begin{cases} 2x - 3y = 0 \\ 8x + 6y = 3 \end{cases}$

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

9) $\begin{cases} \frac{x}{2} + \frac{y}{3} = \frac{1}{12} \\ \frac{2x}{3} + \frac{y}{3} = -\frac{1}{3} \end{cases}$

Solve each by using a system: (use 2 variables and 2 equations)

10) The perimeter of a rectangular garden is 34 feet. The length of the garden is 3 feet more than the width. Determine the length and width of the garden.

11) The sum of two numbers is 17. The same numbers have a difference of 7. Find the two numbers.

12) The sum of two numbers is 32. Twice the larger subtracted from the smaller is -22. Find the numbers.

13) Fred and Barney go to breakfast. Fred orders two sausage biscuits and one orange juice. Fred's entire meal had 98 grams of carbohydrates. Barney orders 3 sausage biscuits and 2 orange juices and his meal had 168 grams of carbohydrates. How many grams of carbohydrates are in the sausage biscuits and in the orange juice?

14) Admission to the movies costs $4.50 per child and $7.50 per adult. If the theater took in $3337.50 in revenue and had 525 patrons, how many of each ticket was sold.