You have two cell phone companies to choose from:

All-Tell: This company charges $40 a month and $.05 per text.

$T = 40 + .05t$

No-Tell: This company charges $35 a month and $.10 per text.

$T = 35 + .10t$

$40 + .05t = 35 + .10t \rightarrow t = 100$

t = # texts

T = TOTAL monthly charge

Model each company with an equation and find the number of texts for which the total bill will be the same.

$t = 100$ texts

Solve this equation:

$$-4x + 7 = -2x + 13$$

$+4x \quad +4x$

$$7 = -2x + 13$$

$-13 \quad -13$

$$-6 = -2x$$

$\frac{-6}{-2} = \frac{-2x}{-2}$

$$x = 3$$

Section 7-2

Solving systems of equations by using SUBSTITUTION:

- Take information from one equation and place it into the other equation.

Solve this equation using subsitution:

$y = 3.5x - 12 \quad y = 7.2x + 17.6$

Solve this equation using subsitution:

$y = 3.5x - 12 \quad y = 7.2x + 17.6$

$3.5x - 12 = 7.2x + 17.6$

$-3.5x \quad -3.5x$

$-12 = 3.7x + 17.6$

$-17.6 \quad -17.6$

$-29.6 = 3.7x$

$\frac{-29.6}{3.7} = \frac{3.7x}{3.7}$

$x = 8$

Now find y: $y = 3.5(8) - 12 = 16$

$(8, 16)$

Solve. $4x - 3(2x - 10) = 24$

$4x - 6x + 30 = 24$

$-2x + 30 = 24$

$-30 \quad -30$

$-2x = -6$

$\frac{-2x}{-2} = \frac{-6}{-2}$

$x = 3$

Solve this system of equations using SUBSTITUTION

$y = 4x + 1$ $\qquad 5x - 3y = -17$

$y = 4(2) + 1$

$= 8 + 1$

$y = 9$

$5x - 3(4x + 1) = -17$

$5x - 12x - 3 = -17$

$+3 \qquad +3$

$-7x = -14$

$\frac{-7x}{-7} = \frac{-14}{-7}$

$x = 2$

$(2, 9)$