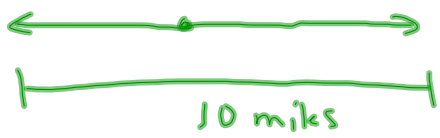
11.



Distance car 1 + Distance car 2 = 10

$rt + rt = 10$

$40t + 55t = 10$

$\frac{95t}{95} = \frac{10}{95}$

$t = .11$ hrs

17. $-4 \cdot 0 \leq \frac{x-1}{-4} < 2 \cdot -4$

$0 \geq x-1 > -8$

$+1 \quad +1 \quad +1$

$1 \geq x > -7$

38. $\begin{cases} 35x - 33y = 0 \\ 12x - 11y = 92 \end{cases}$

$35x - 33y = 0$ $\quad -35x \quad -35x$

$\frac{-33y}{-33} = \frac{-35x}{-33}$

$y = \frac{35}{33}x$

$12x - 11y = 92$ $\quad -12x \quad -12x$

$\frac{-11y}{-11} = \frac{-12x}{-11} + \frac{92}{-11}$

$y = \frac{12}{11}x - \frac{92}{11}$

0-5 +
6 10 ✓
11 -

4.1 Systems of Equations

Substitution Method

$$\begin{cases} x+y=5 \\ 2x-y=0 \end{cases}$$

Isolate 1 variable & substitute into the other equation.

$x+y=5$

$-x \quad -x$

$y=5-x$

$2x-1(5-x)=0$

$2x-5+x=0$

$3x-5=0$

$+5 \quad +5$

$\frac{3x}{3}=\frac{5}{3}$

$x=\frac{5}{3}$

$y=5-x$

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

$y=\frac{10}{3}$

$\left(\frac{5}{3}, \frac{10}{3}\right)$

$$\begin{cases} 3x - 2y = 1 \\ x + 4y = 3 \end{cases}$$

$x + 4y = 3$

$-4y \quad -4y$

$x = 3 - 4y$

$3(3-4y) - 2y = 1$

$9 - 12y - 2y = 1$

$9 - 14y = 1$

$-9 \quad -9$

$\frac{-14y}{-14} = \frac{-8}{-14}$

$y = \frac{4}{7}$

$x = 3 - 4y$

$x = 3 - 4\left(\frac{4}{7}\right)$

$x = 3 - \frac{16}{7}$

$x = \frac{5}{7}$

$\left(\frac{5}{7}, \frac{4}{7}\right)$

Elimination / Linear combo.

$$\begin{cases} 4x - 5y = 13 \\ 3x - y = 7 \end{cases}$$

Add opposites in x's or y's

-5

$$\begin{cases} 4x - 5y = 13 \\ -15x + 5y = -35 \end{cases}$$

$$\frac{-11x}{-11} = \frac{-22}{-11}$$

$$x = 2$$

$3x - y = 7$

$3(2) - y = 7$

$6 - y = 7$

$-6 \quad -6$

$$\frac{-y}{-1} = \frac{1}{-1} \quad y = -1$$

$(2, -1)$

$$\begin{cases} -2x + 6y = 3 \\ 4x - 12y = -6 \end{cases}$$

$$\begin{cases} -4x + 12y = 6 \\ 4x - 12y = -6 \end{cases}$$

$$0 = 0 \quad \text{True statement}$$

Infinite solutions

$$\begin{cases} (3x + 9y = 8)\cdot 2 \\ (2x + 6y = 7)\cdot -3 \end{cases}$$

$$\begin{cases} 6x + 18y = 16 \\ -6x - 18y = -21 \end{cases}$$

$$0 = -5$$ false statement

No solutions

Hw: p. 245

42-74 even

odds E.C.