

1-29/ .

13.  $y + 4 = -5x$

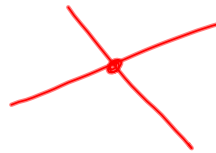
$$y = \underline{6x} - 7$$

$$y + 4 = -5x$$

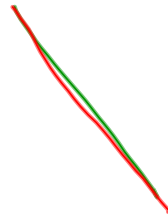
$$\begin{matrix} -4 & -4 \end{matrix}$$

$$y = \underline{-5x} - 4$$

consistent & independent → different slope  
one solution



consistent & dependent → same slope + same y-ints



same line  
infinitely many solutions

inconsistent → same slope, different y-ints



parallel lines  
no solution

$$14. \quad \begin{array}{r} 3x - 2y = -5 \\ \underline{-3x} \quad \underline{-3x} \end{array} \quad \frac{4y}{4} = \frac{6x}{4} + \frac{10}{4}$$

$$\frac{-2y}{-2} = \frac{-3x}{-2} - \frac{5}{-2} \quad y = \frac{3}{2}x + \frac{5}{2}$$

$$\boxed{y = \frac{3}{2}x + \frac{5}{2}}$$

← same  
consistent & dependent

$$15. \quad \begin{array}{r} 6x - 2y = -10 \\ \underline{-6x} \quad \underline{-6x} \end{array}$$

$$\frac{-2y}{-2} = \frac{-6x}{-2} - \frac{10}{-2}$$

$$y = \boxed{3x} \textcircled{+5}$$

$$y = \boxed{3x} \textcircled{+2}$$

inconsistent



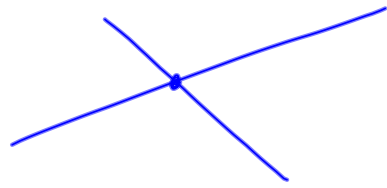
16.

$$\begin{array}{r} y + 6x = 18 \\ -6x \quad -6x \\ \hline \end{array}$$

$$y = -6x + 18$$

consistent &amp; independent

$$y = -7x + 2$$



20.

$$\begin{array}{r} 3x = y + 2 \\ -2 \quad -2 \\ \hline \end{array}$$

$$3x - 2 = y$$

$$y = 3x - 2$$

$$\begin{array}{r} 3y = x + 2 \\ \frac{3y}{3} = \frac{x}{3} + \frac{2}{3} \\ \hline \end{array}$$

$$y = \frac{1}{3}x + \frac{2}{3}$$

independent  
(consistent)

Homework questions

$$8. \begin{array}{r} x - y = 2 \\ + y \quad + y \\ \hline x = y + 2 \end{array}$$

$$\begin{array}{r} \cancel{4A} \\ - \cancel{24B} \end{array}$$

$$x + y = -2$$

$$\downarrow$$

$$-(y+2) + y = -2$$

$$\begin{array}{r} \cancel{1x} - \cancel{1y} = \cancel{2} \\ -\cancel{1x} + \cancel{1y} = \cancel{-2} \\ \hline 0x + 0y = 0 \\ 0 = 0 \end{array}$$

$$y - 2 + y = -2$$

$$-2 = -2$$

True

infinitely many solutions

$$9. \begin{array}{l} 4x + y = 10 \\ y = -4x + 5 \end{array} \rightarrow 4x + (-4x + 5) = 10$$

$$\begin{array}{r} \cancel{4x} - \cancel{4x} + 5 = 10 \\ 0x \end{array}$$

$$5 = 10$$

False

no solution

$$\begin{array}{r} 10. \quad -1(2x + y = 3) \\ 4x + y = 6 \\ \underline{-2x - y = -3} \end{array}$$

$$\frac{2x}{2} = \frac{3}{2}$$

$$x = \frac{3}{2}$$

$$\left(\frac{3}{2}, 0\right)$$

$$\begin{array}{r} 4x = 6 - y \\ + y \quad + y \\ \hline \end{array}$$

$$4x + y = 6$$

$$2 \times \left(\frac{3}{2}\right) + y = 6$$

$$\begin{array}{r} 6 + y = 6 \\ -6 \quad -6 \\ \hline \end{array}$$

$$y = 0$$

Worksheet 7.4

(4, 5, 21-24)