$(-4,4)$

$-3x - y = 6$

$-3(-4) - 4 = 6$

$12 - 4 = 6$

$8 \neq 6$

$(-3,3)$

$-3(-3) - 3 = 6$

$9 - 3 = 6$

$\boxed{6 = 6}$

$-4x + 7 = 2y - 3$

$x = 0$

$-4(0) + 7 = 2y - 3$

$7 = 2y - 3$

$+3 \quad +3$

$\frac{10}{2} = \frac{2y}{2}$

$5 = y$

$y = 0$

$-4x + 7 = 2(0) - 3$

$-4x + 7 = -3$

$-7 \quad -7$

$\frac{-4x}{-4} = \frac{-10}{-4}$

$x = \frac{10}{4}$

$x = \frac{5}{2}$

x-intercept $= \left(\frac{5}{2}, 0\right)$

y-intercept $= (0, 5)$

$2x + 3y = 12 \qquad y = 8$

$2x + 3(8) = 12$

$2x + 24 = 12$

$-24 \quad -24$

$\frac{2x}{2} = \frac{-12}{2}$

$x = -6$

$\boxed{x = -6}$

$(2,-2)$ and $(9,3)$

$(y_2-y_1)=m(x_2-x_1)$

$(3-(-2))=m(9-2)$

$3+2$

$5=7m$

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

$\boxed{m=\frac{5}{7}}$

$(-7,0)$ and $(-7,8)$

$(y_2-y_1)=m(x_2-x_1)$

$(8-0)=m(-7-(-7))$

$-7+7$

$\frac{8}{0}=\frac{m(0)}{0}$

$\boxed{\text{undefined}=m}$

$(-3,4)$ and $(1,-3)$

$(y_2-y_1)=m(x_2-x_1)$

$(-3-4)=m(1-(-3))$

$1+3$

$\frac{-7}{4}=\frac{4m}{4}$

$\boxed{m=-\frac{7}{4}}$

$(-9,6)$ and $(-6,-9)$

$(y_2-y_1)=m(x_2-x_1)$

$(-9-6)=m(-6-(-9))$

$-6+9$

$\frac{-15}{3}=\frac{m(3)}{3}$

$\boxed{-5=m}$

$(-8, -2)$ and $(-4, 6)$

$(y_2 - y_1) = m(x_2 - x_1)$

$(6 - (-2)) = m(-4 - (-8))$

$6 + 2 \qquad -4 + 8$

$8 \qquad = m(4)$

$\frac{8}{4} = \frac{4m}{4}$

$m = 2$

$y = mx + b$

$-mx$

$y - mx = b$

$y - 2x = b$

$y - 2(2) = b$

$y = b$

$b = y - mx$

$b = -2 - 2(-8)$

$b = -2 + 16$

$b = 14$

$y = mx + b$

$\boxed{y = 2x + 14}$

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

$y = 0$

$$(0) = -\frac{3}{2}x + 3$$

$+3 \quad +3$

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

$$\frac{-\frac{3}{2}}{-\frac{3}{2}}$$

$$\frac{3}{1} \div -\frac{3}{2}$$

$$\frac{3}{1} \cdot -\frac{2}{3} = -\frac{6}{3} = -2$$

$x = -2$

$(-2, 0)$

$x = 0$

$$y = -\frac{3}{2}(0) - 3$$

$y = -3$

$(0, -3)$

$(-2, 0)$ and $(0, -3)$

$$-14x - 7y < 4$$

$+14x \quad +14x$

$$\frac{-7y}{-7} < \frac{14x + 4}{-7}$$

$$y > \frac{14x}{-7} - \frac{4}{7}$$

$$y > -2x - \frac{4}{7}$$

$y = -2x - \frac{4}{7}$

$x = 0$

$y = -2(0) - \frac{4}{7}$

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

$(0, -\frac{4}{7})$

$y = 0$

$(0) = -2x - \frac{4}{7}$

$+\frac{4}{7} \quad +\frac{4}{7}$

$\frac{\frac{4}{7}}{-2} = \frac{-2x}{-2}$

$\frac{4}{7} \div -\frac{2}{1}$

$\frac{4}{7} \cdot -\frac{1}{2} = -\frac{4}{14}$

$x = -\frac{2}{7}$

$(-\frac{2}{7}, 0)$

$y > -2x - \frac{4}{7}$

$y > -2(1) - \frac{4}{7}$

$y > -2 - \frac{4}{7}$

$y > -2.57$

$6x - 2y > -11$

$-6x \qquad -6x$

$\frac{-2y}{-2} > \frac{-11-6x}{-2}$

$y < \frac{-11}{-2} + 3x$

$y < \frac{11}{2} + 3x$

$y < \frac{11}{2} + 3(1)$

$y < 5.5 + 3$

$y < 8.5$

$-14x - 7y < 4$

$+14x \qquad +14x$

$\frac{-7y}{-7} < \frac{14x+4}{-7}$

$y > -2x - \frac{4}{7}$

$y > -2(1) - \frac{4}{7}$

$y > -2.57$

$8x - 5y < 3$

$-8x \qquad -8x$

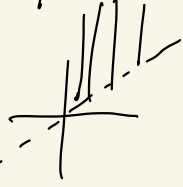
$\frac{-5y}{-5} < \frac{-8x+3}{-5}$

$y > \frac{8}{5}x - \frac{3}{5}$

$y > \frac{8}{5}(1) - \frac{3}{5}$

$y > 1.6 - 0.6$

$y > 1$



$-9x + 4y \leq 8$

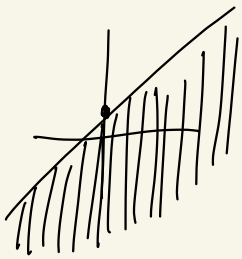
$+9x \qquad +9x$

$\frac{4y}{4} \leq \frac{9x+8}{4}$

$y \leq \frac{9}{4}x + 2$

$y \leq \frac{9}{4}(0) + 2$

$y \leq 2$



$y = \frac{4}{5}x - 7$

$y = \frac{4}{5}(0) - 7$

$y = -7$

$(-3) = \frac{4}{5}x - 7$

$+7 \qquad +7$

$\frac{4}{5}y = \frac{4}{5}x$

$\frac{\frac{4}{5}}{\frac{4}{5}} \quad \frac{\frac{4}{5}}{\frac{4}{5}}$

$5 = x$

$y = \frac{2}{3}x - 4$

$x = 0$

$y = \frac{2}{3}(0) - 4$

$y = -4$

$(0, -4)$

$y = \frac{2}{3}x - 4$

$y = 0$

$(0) = \frac{2}{3}x - 4$

$+4 \qquad +4$

$4 = \frac{2}{3}x$

$\frac{4}{1} \div \frac{2}{3}$

$\frac{4}{1} \cdot \frac{3}{2} = \frac{12}{2}$

$6 = x$

$(6, 0)$

$(-9,7)$ and $(-6,-3)$

$(y_2 - y_1) = m(x_2 - x_1)$

$(-3-7) = m(-6-(-9))$

$-10 = m(-6+9)$

$\frac{-10}{3} = \frac{3m}{3}$

$m = -\frac{10}{3}$

$y = mx + b$

$b = y - mx$

$b = (7) - (-\frac{10}{3})(-9)$

$b = 7 - 30$

$b = -23$

$\boxed{y = -\frac{10}{3} - 23}$

$-5x + 6y > 12$

$+5x \quad +5x$

$\frac{6y}{6} > \frac{5x+12}{6}$

$y > \frac{5}{6}x + 2$

$x = 1$

$y > \frac{5}{6}(1) + 2$

$y > 2.83$

$y = -2x + 5$

$x = 0$

$y = -2(0) + 5$

$y = 5$

$y = -2x + 5$

$(7) = -2x + 5$

$-5 \quad -5$

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

$-1 = x$

Unit Test

$(-1,6)$ and $(7,-2)$

$(y_2 - y_1) = m(x_2 - x_1)$

$(-2-6) = m(7-(-1))$

$-8 = m(7+1)$

$\frac{-8}{8} = \frac{8m}{8}$

$-1 = m$

$b = y - mx$

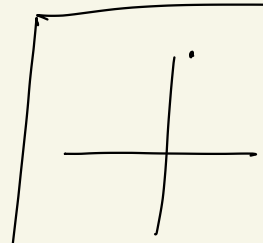
$b = 6 - (-1)(-1)$

$b = 6 - (1)$

$b = 6 - 1$

$b = 5$

$y = -x + 5$



$y = -9x - 14$

$(0) = -9x - 14$

$+14 \quad +14$

$\frac{14}{-9} = \frac{-9x}{-9}$

$x = -\frac{14}{9}$

$y = -9(0) - 14$

$y = -14$

x-int $= \left(-\frac{14}{9}, 0\right)$

y-int $= (0, -14)$

$y = \frac{6}{5}x + 1$

$x = 0$

$y = \frac{6}{5}(0) + 1$

$y = 1$

$y = 7$

$(7) = \frac{6}{5}x + 1$

$-1 \qquad -1$

$6 = \frac{6}{5}x$

$\frac{6}{5} \qquad \frac{6}{5}$

$x = 5$

$(0, 1)$ and $(5, 7)$

$y + 1 = 3(x - 4)$

$y + 1 = 3x - 12$

$(4, -1)$ and $(5, -2)$

$(4, -1)$

$(-1) + 1 = 3(4) - 12$

$0 = 12 - 12$

$0 = 0$ ✓

$(5, 2)$

$(2) + 1 = 3(5) - 12$

$3 = 15 - 12$

$3 = 3$ ✓

$y = 3x - 7$

$x = 1$

$y = 3(1) - 7$

$y = 3 - 7$

$\boxed{y = -4}$

$-3x - 4y \leq 2$

$+3x \quad +3x$

$\frac{-4y}{-4} \leq \frac{3x + 2}{-4}$

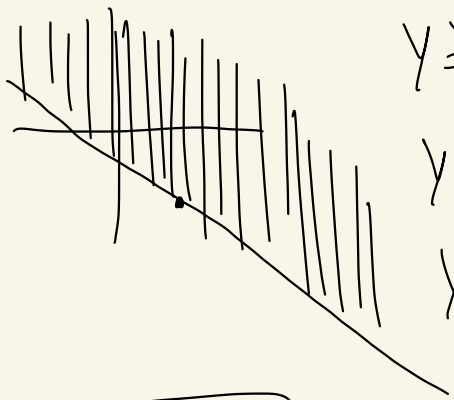
$y \geq -\frac{3}{4}x - \frac{1}{2}$

$x = 1$

$y \geq -\frac{3}{4}(4) - \frac{1}{2}$

$y \geq -3 - \frac{1}{2}$

$y \geq -3.5$



$(-6, -5)$ and $(-4, -4)$

$(y_2 - y_1) = m(x_2 - x_1)$

$(-4 - (-5)) = m(-4 - (-6))$

$-4 + 5 = m(-4 + 6)$

$1 = m(2)$

$\frac{1}{2} = \frac{2m}{2}$

$m = \frac{1}{2}$

$b = y - mx$

$b = (-5) - \frac{1}{2}(-6)$

$b = (-5) + 3$

$b = -2$

$y = mx + b$

$\boxed{y = \frac{1}{2}x - 2}$

$y+1=3(x-4)$

$y+1=3x-12$

$(4,-1)$

$(-1)+1=3(4)-12$

$0=12-12$

$0=0$

$y+1=3x-12$

$(5,2)$

$(2)+1=3(5)-12$

$3=15-12$

$3=3$

$(4,-1)$ and $(5,2)$

$-x+8y>-24$

$+x \qquad +x$

$\frac{8y}{8} > \frac{x-24}{8}$

$y > \frac{1}{8}x-3$

$x=8$

$y > \frac{1}{8}(8)-3$

$y > 1-3$

$y > -2$

$6x + 7y = 4x + 4y$

$-4x \quad -4x$

$2x + 7y = 4y$

$-7y \quad -7y$

$2x = -3y$

$y = -4$

$2x = -3(-4)$

$\frac{2x}{2} = \frac{12}{2}$

$\boxed{x = 6}$

$y = x + 4$ $\quad (0, 4)$ $\quad (-4, 0)$

$x = 0$

$y = (0) + 4$

$y = 4$

$y = 0$

$(0) = x + 4$

$-4 \quad -4$

$-4 = x$

$-7x - 6y = -15$

$+7x \quad +7x$

$\frac{-6y}{-6} = \frac{7x - 15}{-6}$

$y = -\frac{7}{6}x + \frac{15}{6}$

$y = -\frac{7}{6}x + \frac{5}{2}$

$(0, \frac{5}{2})$

$x = 0$

$y = -\frac{7}{6}(0) + \frac{5}{2}$

$y = \frac{5}{2}$

$y = 0$

$(0) = -\frac{7}{6}x + \frac{5}{2}$

$-\frac{5}{2} = \frac{-\frac{7}{6}x}{-\frac{7}{6}}$

$x = \frac{15}{7}$ $\quad (\frac{15}{7}, 0)$

$x\text{-int} = \left(\frac{15}{7}, 0\right)$

$y\text{-int} = \left(0, \frac{5}{2}\right)$