T-A2 Algebra 2 Week 17 1/17

$3(-5x + 4y = 2)$

$15x + 9y = 57$

$-15x + 12y = 6$

$+ \quad 15x + 9y = 57$

$\frac{21y}{21} = \frac{63}{21}$

$y = 3$

$-5x + 4y = 2$

$-5x + 4(3) = 2$

$-5x + 12 = 2$

$-12 \quad -12$

$\frac{-5x}{-5} = \frac{-10}{-5}$

$x = 2$

$(2, 3)$

1.) $-(x + 2y = 6)$

$x - 8y = -34$

$-x - 2y = -6$

$+ \quad x - 8y = -34$

$\frac{-10y}{-10} = \frac{-40}{-10}$

$y = 4$

$x + 2y = 6$

$x + 2(4) = 6$

$x + 8 = 6$

$-8 \quad -8$

$x = -2$

$(-2, 4)$

2.) $6x - 4y = 22$

$-2(9x - 2y = 29)$

$6x - 4y = 22$

$+ \quad -18x + 4y = -58$

$\frac{-12x}{-12} = \frac{-36}{-12}$

$x = 3$

$6x - 4y = 22$

$6(3) - 4y = 22$

$18 - 4y = 22$

$-18 \quad -18$

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

$y = -1$

$(3, -1)$

$$\begin{matrix} 4x & -8y & = 44 \\ 3x & +5y & = -11 \end{matrix}$$

$4x \rightarrow 12x$

$3x \rightarrow -12x$

$3(4x - 8y = 44)$

$-4(3x + 5y = -11)$

$12x - 24y = 132$

$+ \; -12x - 20y = 44$

$-44y = 176$

$\frac{-44y}{-44} = \frac{176}{-44}$

$y = -4$

$4x - 8y = 44$

$4x - 8(-4) = 44$

$4x + 32 = 44$

$-32 \quad -32$

$\frac{4x}{4} = \frac{12}{4}$

$x = 3$

$(3, -4)$

$5(4x - 8y = 44)$

$8(3x + 5y = -11)$

$20x - 40y = 220$

$+ \; 24x + 40y = -88$

$\frac{44x}{44} = \frac{132}{44}$

$x = 3$

$3x + 5y = -11$

$3(3) + 5y = -11$

$9 + 5y = -11$

$-9 \quad -9$

$\frac{5y}{5} = \frac{-20}{5}$

$y = -4$

$(3, -4)$

System of Inequalities

$y < 2x + 3$

- $<$: dashed line
- slope: $\frac{2 \text{ up}}{1 \text{ right}}$
- $2x + 3$: y-int

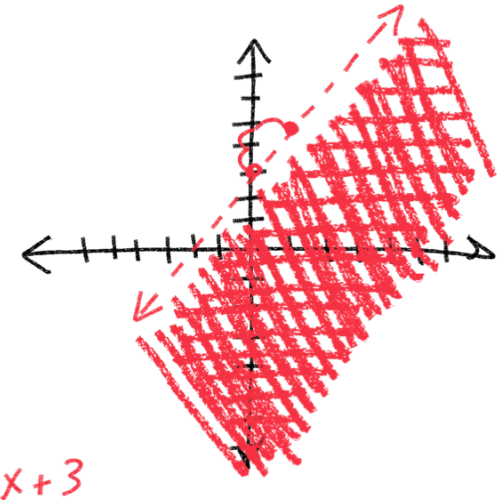
Use {(0,0)}

(0,0)

$y < 2x + 3$

$0 < 2(0) + 3$

$0 < 3$ true



$4x - 8y > 24$

$x = 0$

$-8y = 24$

$\frac{-8y}{-8} = \frac{24}{-8}$

$y = -3$

(0, -3)

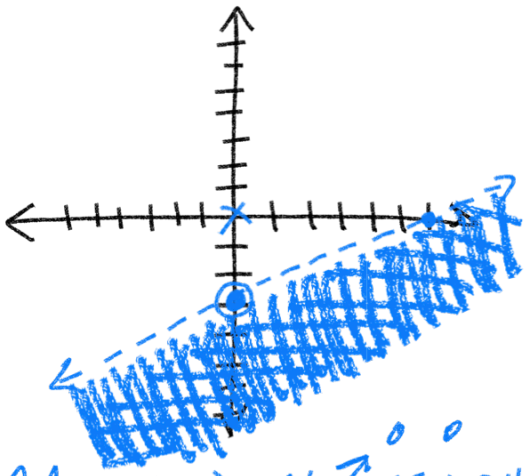
$y = 0$

$4x = 24$

$\frac{4x}{4} = \frac{24}{4}$

$x = 6$

(6, 0)



{(0,0)}

(0,0)

$4x - 8y > 24$

$0 > 24$

false

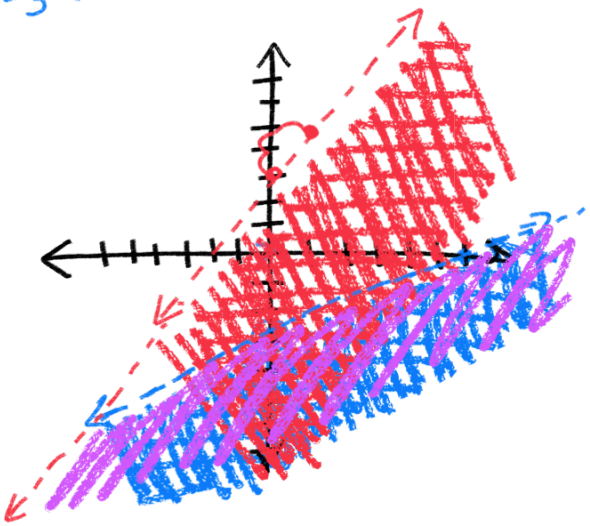
$4x - 8y > 24$

$-4x \quad -4x$

flip!

$\frac{-8y}{-8} > \frac{-4x}{-8} + \frac{24}{-8}$

$y < \frac{1}{2}x - 3$



$y > \frac{1}{2}x - 5$

$y < -3x + 2$

$-\frac{3}{1}$ down 3 / 1 right

(0,0)

$y > \frac{1}{2}x - 5$ ✓ (0,0)

$0 > \frac{1}{2}(0) - 5$

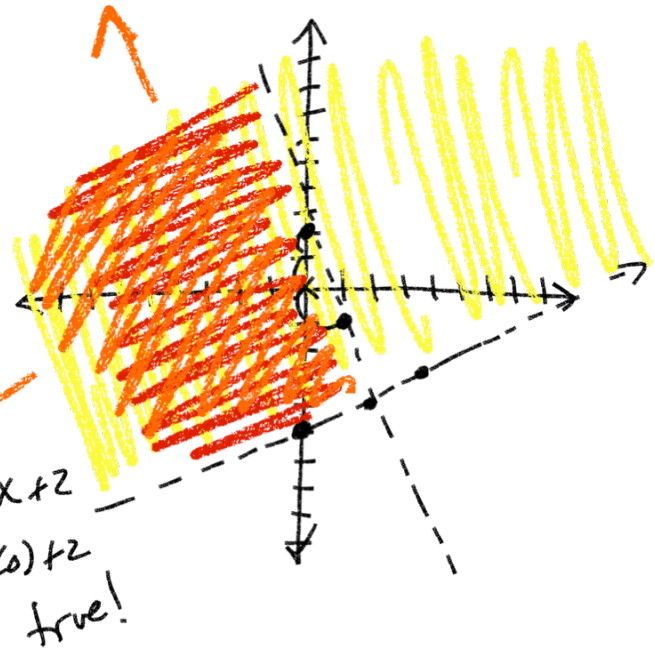
$0 > -5$

true!

$y < -3x + 2$

$0 < -3(0) + 2$

$0 < 2$ true!



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

$y \geq 4x - 5$

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

(0,0) $0 < \frac{2}{3}(0) - 2$

$0 < -2$ false

$y \geq 4x - 5$

$0 \geq 4(0) - 5$

$0 \geq -5$

true