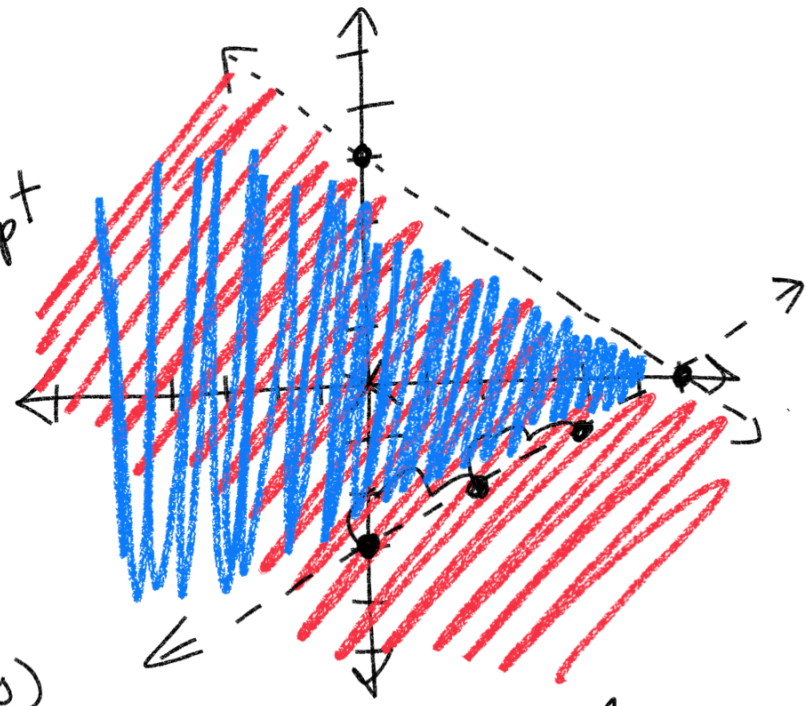
W-A2 Algebra 2 Week 18 2/1

1.) $2x + 3y < 12$

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

slope

intercept



$\cancel{2x} + 3y < 12$

$y = 4 \quad (0,4)$

$2x + \cancel{3y} < 12$

$x = 6 \quad (6,0)$

$\{(0,0)\}$

$2(0) + 3(0) < 12$

$0 < 12$

$0 > 12$ false

slope $= \frac{1}{2} = \frac{\text{up } 1}{\text{2 right}}$

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

$0 > \frac{1}{2}(0) - 3$

$0 > -3$

2.) $4\overset{(0)}{x} - 6\overset{(0)}{y} > 12$

$y > -2$

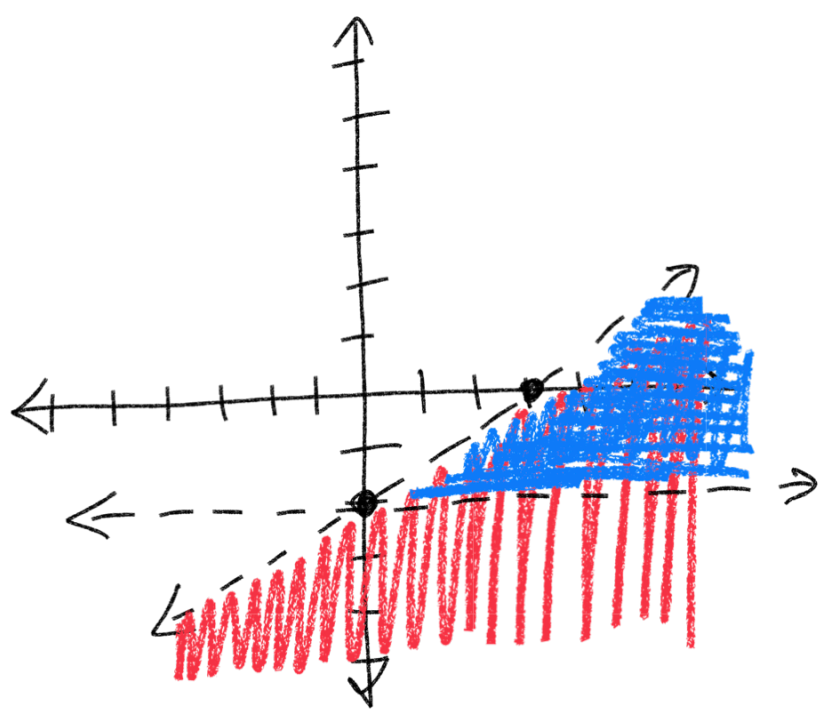
$0 > -2$ true

$\cancel{4x} - 6y > 12 \quad (0,-2)$

$y = -2$

$4x \cancel{- 6y} > 12$

$x = 3 \quad (3,0)$



Restrictions

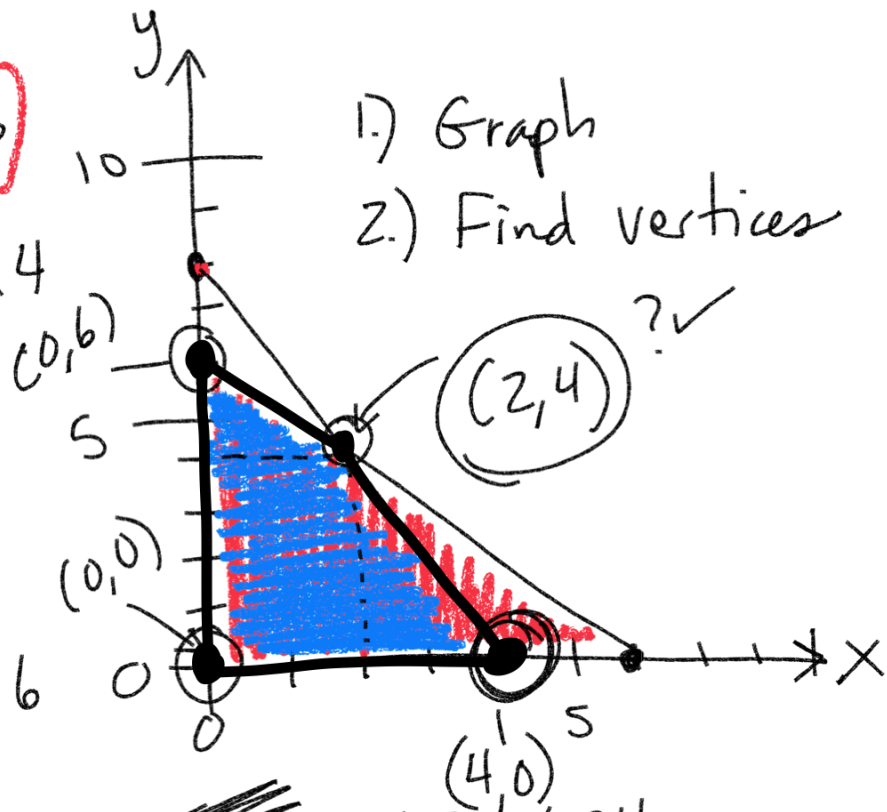
x = squirrel y = dumpster

$$\boxed{\overset{0}{x} + \overset{0}{y} \le 6}$$

$\$6x + \$3y \le \$24$

quadrant I $\begin{cases} x \ge 0 \\ y \ge 0 \end{cases}$

1.) Graph
2.) Find vertices



$x + y = 6$ $x + y = 6$

$\$6x + \$3y \le 24$ $\$6x + \$3y \le 24$

$x = 4$ $(4,0)$ $y = 8$

$-3(x + y = 6)$

$6x + 3y = 24$

$-3x - 3y = -18$

$6x + 3y = 24$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

$x + y = 6$

$2 + y = 6$

$-2 \quad -2$

$y = 4$

$\$8x + \$2{,}500y = P$ <u>Maximize</u>

x y

$(0,6) = \$8(0) + \$2500(6) = \$15{,}000$

$(0,0) = \$8(0) + \$2500(0) = \$0$

$(4,0) = \$8(4) + \$2500(0) = \$32$

$(2,4) = \$8(2) + \$2500(4) = \$10{,}016$

$\$16 + \$10{,}000$

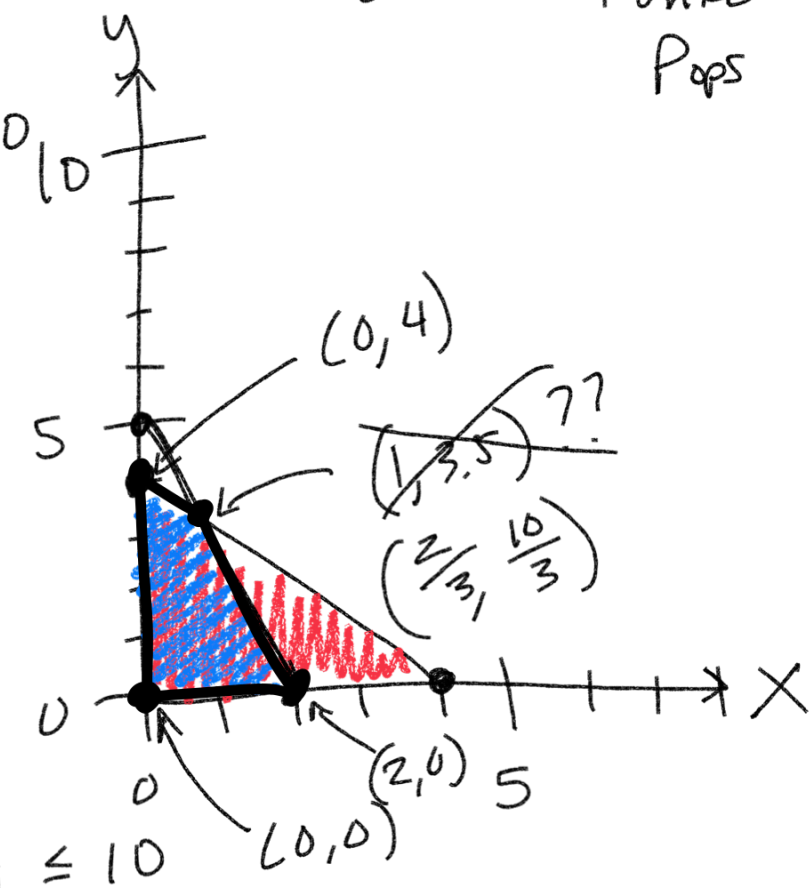
x = toilet plunger y = Nate Funko Pops

$x + y \le 4$

$\$5x + \$2y \le \$10$

$x \ge 0$

$y \ge 0$



$x + y \le 4$

$x = 4$ $(4,0)$

$y = 4$

$5x + 2y \le 10$

$x = 0$ $y = 5$ $(0,5)$

$x = 2$ $y = 0$ $(2,0)$

$-2(x + y = 4)$

$5x + 2y = 10$

$-2x - \cancel{2y} = -8$

$5x + \cancel{2y} = 10$

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

$x = 2/3$

$x = 2/3$

$x + y = 4$

$\frac{2}{3} + y = 4$

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

$y = 3\frac{1}{3}$ or $\frac{10}{3}$

$12x + \$0.05y = P$ Maximize

$(0,4) = 12(0) + \$0.05(4) = \$0.20$

$(0,0) = 12(0) + \$0.05(0) = \$0$

$(2,0)$ $12(2) + \$0.05(0) = \$24$

$\left(\frac{2}{3}, \frac{10}{3}\right.$ $\$12\left(\frac{2}{3}\right) + \$0.05\left(\frac{10}{3}\right) = \$8.17$

8 $\$0.17$