

LINEAR PROGRAMMING HW

1) Fred's Coffee sells two blends of beans: Yusip Blend and Exotic Blend. Yusip Blend is one-half Costa Rican beans and one-half Ethiopian beans. Exotic Blend is one-quarter Costa Rican beans and three-quarters Ethiopian beans. Profit on the Yusip Blend is \$3.50 per pound, while profit on the Exotic Blend is \$4.00 per pound. Each day Fred receives a shipment of 200 pounds of Costa Rican beans and 330 pounds of Ethiopian beans to use for the two blends. How many pounds of each blend should be prepared each day to maximize profit? What is the maximum profit?

Let $x =$ LBS OF YUSIP BLEND

Let $y =$ LBS OF EXOTIC BLEND

	Yusip	Exotic	TOTALS
Costa Rican	$\frac{1}{2}$	$\frac{1}{4}$	200
Ethiopian	$\frac{1}{2}$	$\frac{3}{4}$	330
profit	3.50	4	

OBJECTIVE FUNCTION

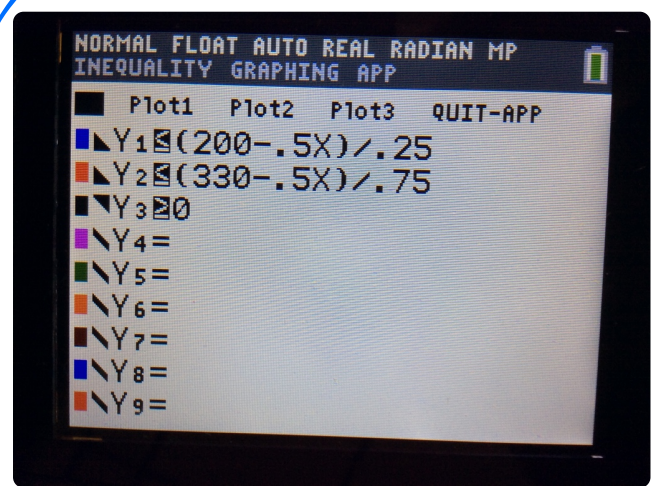
$$\text{profit} = 3.50x + 4y$$

CONSTRAINTS

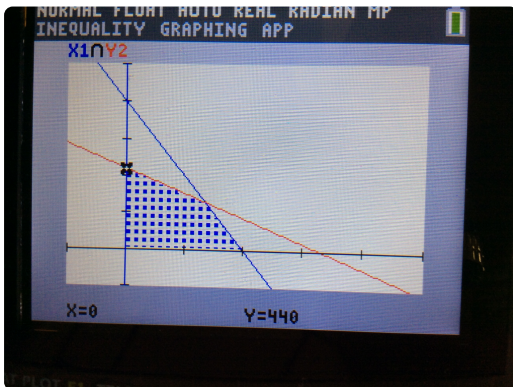
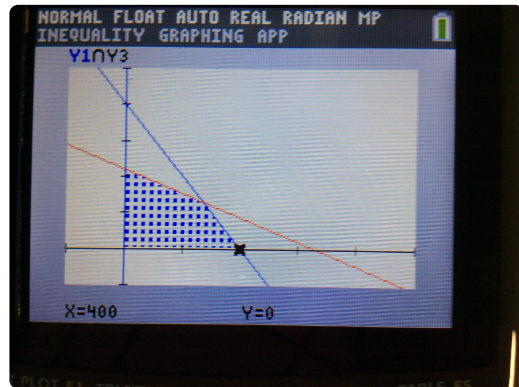
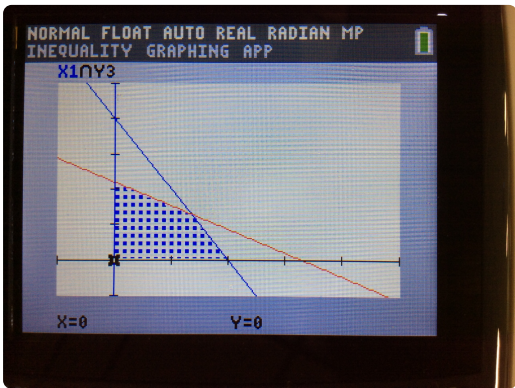
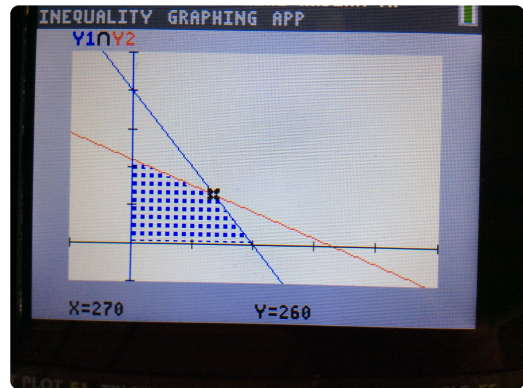
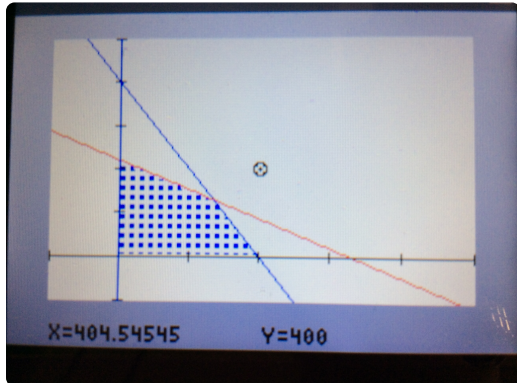
$$\frac{1}{2}x + \frac{1}{4}y \leq 200$$

$$\frac{1}{2}x + \frac{3}{4}y \leq 330$$

$$x \geq 0$$



$$y \geq 0$$



$$\text{profit} = 3.5x + 4y$$

$$(0, 0) = \$ 0$$

$$(0, 440) = \$ 1760$$

$$(400, 0) = \$ 1400$$

$$(270, 260) = \$ 1985$$

270 lbs of Y51P &

260 lbs of Exotic