Worksheet 6

11 Aug 23

Pizza = x Sandwich = y

$X = [x, y]$

$F(x) = 25x + 15y$

Constraints: $8x + 3y \leq 60$

$x + y \leq 10$

$A = [[8,3],[1,1]]$ $b = [60, 10]$ $Ax \leq b$

$$\begin{bmatrix} 8,3 \\ 1,1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} \leq \begin{bmatrix} 60 \\ 10 \end{bmatrix}$$

X = 0:

$8(0) + 3y = 60$

$y = 20$ (cannot exceed 10)

$= (0, 10) = \$150$

Y = 0:

$8x + 3(0) = 60$

$x = 7.5 \approx 7$

$= (7, 0) = \$175$

$8x + 3y = 60$

$3y = 60 - 8x$

$y = \frac{(60 - 8x)}{3}$

$y = \frac{(60 - 8(6))}{3}$

$y = \frac{12}{3} = 4$

$x + y = 10$

$x + \frac{(60 - 8x)}{3} = 10$

$\frac{60 - 8x}{3} = 10 - x$

$60 - 8x = 30 - 3x$

$-5x = -30$

$x = 6$

$(6, 4) = 25(6) + 15(4)$

Best profit = $210

6 Pizza's

4 Sandwiches

	Pizza	Sandwich	Available
Time	8	3	60
Limit	1	1	10