



Advanced Math

pg 629

38) Constraints

$$2.5x + 3y \leq 4000$$

$$2x + y \leq 2500$$

$$.75x + 1.25y \leq 1500$$

$$x \geq 0 \quad y \geq 0$$

Points

$$(0, 1200) \quad (1000, 500)$$

$$(0, 0) \quad (1250, 0)$$

$$(571.429, 857.143)$$

Max is \$76000 at 1000 Model A
500 Model B

39) Constraints

$$x \geq 0 \quad y \geq 0$$

$$x + y \leq 250$$

$$250x + 400y \leq 70000$$

Points

$$(0, 0) \quad (0, 175)$$

$$(250, 0) \quad (200, 50)$$

Max Profit = \$11500

200 of \$250 Model

50 of \$400 Model

40) Constraints

$$x \geq 0 \quad y \geq 0$$

$$x + y \leq 150$$

$$x + 2y \leq 240$$

$$.3x + .1y \leq 30$$

Points

$$(0, 0) \quad (0, 120)$$

$$(60, 90) \quad (75, 75)$$

$$(100, 0)$$

Max Profit: \$29550

60 acres Crop A

90 acres Crop B

42) Constraints

$$x + y = 1$$

$$90x + 92y \geq 90$$

$$x \geq 0 \quad y \geq 0$$

Has to be equal to make one gallon

Points

$$\left(\frac{1}{6}, \frac{5}{6}\right)$$

$$(1, 0)$$

Minimum Cost \$1.255/gal

at $\frac{1}{6}$ gal 90 octane

$\frac{5}{6}$ gal 92 octane

Weird Problem! I think this should be in the equality sections. Doesn't fit.

43) Constraints

$$100x + 12.5y \leq 900$$

$$10x + 25y \leq 100$$

$$x \geq 0 \quad y \geq 0$$

Points

$$(0, 0) \quad (0, 40)$$

$$(8, 8) \quad (9, 0)$$

Maxim Revenue \$18400

with 8 audits

2 returns

44) Use 43

Max Revenue \$12000

with 0 audits

40 returns

For extra practice

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