

Kat

2-27-14

Homework Review 10.2

None

10.3

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3(a)  $P(x) = R(x) - C(x)$

$$AC(x) = \bar{C}(x) = \frac{100}{x} + 30 + \frac{x}{10}$$

$$(x) AC(x) = \frac{C(x)}{x}$$

$$C(x) = x \left( \frac{100}{x} + 30 + \frac{x}{10} \right)$$

$$x AC(x) = C(x)$$

$$C(x) = 100 + 30x + \frac{x^2}{10}$$

$$R(x) = (\text{price})(\text{# of items})$$

$R(x) = 46x$

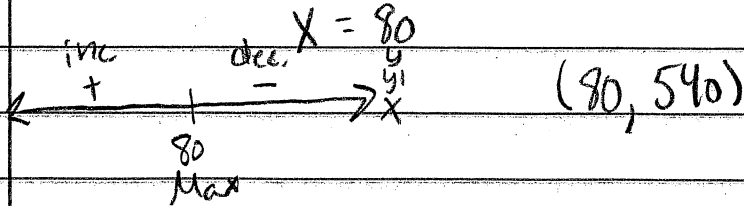
$$P(x) = 46x - \left( 100 + 30x + \frac{1}{10}x^2 \right)$$

$$P(x) = 16x - 100 - \frac{1}{10}x^2$$

$$P'(x) = 16 - \frac{1}{5}x = 0$$

$$-\frac{1}{5}x = -16$$

$$x = 80$$



80 units, \$540 maximum profit

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Ex 2 [slightly different]

Book keeper gave 3 errors

X	Price	Revenue
25	300	(25)300 = 7500
26	290	(26)290 = 7540
27	280	(27)280 = 7560
35	200	(35)(200) = 7000

$$X \quad 300 - 10(x - 25) \quad R = (x)(300 - 10(x - 25))$$

$$R = x(300 + 10x - 250)$$

$$R = x(550 - 10x)$$

$$R = 550x - 10x^2$$

$$R' = 550 - 20x = 0$$

$$-20x = -550$$

$$x = 27.5$$

$$R(27) = 7560$$

$$R(28) = 7560$$

Maximum revenue is \$7,560 and can be made by selling 27 or 28 tickets.

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① 70 apartments

\$540 = all filled

X	Price	Revenue
70	540	70(540) = 37,800
69	550	69(550) = 37,950

\$38,440 is maximum revenue while renting

62 apartments

$$X \quad 540 + 10(70 - x) \quad R = x(540 + 10(70 - x))$$

$$R = x(540 + 700 - 10x)$$

$$R = x(1240 - 10x)$$

$$R(x) = 1240x - 10x^2$$

$$R'(x) = 1240 - 20x = 62$$

HW 10.3 9, 11, 25, 27, 33, 35