

## Math 347

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### Example 2-2: Color TV Problem

A manufacturer of color TV's sells a 19-inch set for \$339 and a 21-inch set for \$399. The cost to the company is \$195 per 19-inch set and \$225 per 21-inch set, plus an additional \$400,000 in fixed costs. In the market in which these sets are sold, the number of sales per year will affect the average selling price. It is estimated that for each type of set, the average selling price drops by one cent for each additional unit sold. Furthermore, sales of the 19-inch set will affect sales of the 21-inch set, and vice-versa. It is estimated that the average selling price for the 19-inch sets will be reduced by an additional 0.3 cents for each 21-inch set sold, and the price for 21-inch sets will decrease by 0.4 cents for each 19-inch set sold. The available production capacity is sufficient to produce 10,000 total sets per year. However, there are only enough supplies for 8,000 units per year for the 21-inch model and 5,000 units per year for the 19-inch model. How should the company set production levels?