Problem A-4 (45 minutes)

1. a. Supporting computations:

   Number of pads manufactured each year:

   38,400 labor-hours ÷ 2.4 labor-hours per pad = 16,000 pads.

   Selling and administrative expenses:

Variable (16,000 pads × $9 per pad).....	$144,000
Fixed	732,000
Total	$876,000

$$\begin{array}{c}\text{Markup percentage} \\ \text{on absorption cost}\end{array} = \frac{\begin{pmatrix}\text{Required ROI} \\ \times \text{ Investment}\end{pmatrix} + \begin{array}{c}\text{Selling and administrative} \\ \text{expenses}\end{array}}{\text{Unit sales } \times \text{ Unit product cost}}$$

$$= \frac{(24\% \times \$1{,}350{,}000) + \$876{,}000}{16{,}000 \text{ pads} \times \$60 \text{ per pad}}$$

$$= \frac{\$1{,}200{,}000}{\$960{,}000} = 125\%$$

b.

Direct materials	$ 10.80
Direct labor	19.20
Manufacturing overhead	30.00
Unit product cost	60.00
Add markup: 125% of unit product cost...	75.00
Selling price	$135.00

Problem A-4 (continued)

c. The income statement will be:

Sales (16,000 pads × $135 per pad)		$2,160,000
Cost of goods sold		
(16,000 pads × $60 per pad)		960,000
Gross margin		1,200,000
Selling and administrative expenses:		
Sales commissions	$144,000	
Salaries	82,000	
Warehouse rent	50,000	
Advertising and other	600,000	
Total selling and administrative expense		876,000
Net operating income		$ 324,000

The company's ROI computation for the pads will be:

$$\text{ROI} = \frac{\text{Net Operating Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average Operating Assets}}$$

$$= \frac{\$324,000}{\$2,160,000} \times \frac{\$2,160,000}{\$1,350,000}$$

$$= 15\% \times 1.6 = 24\%$$

2. Variable cost per unit:

Direct materials	$10.80
Direct labor	19.20
Variable manufacturing overhead (1/5 × $30)	6.00
Sales commissions	9.00
Total	$45.00

If the company has idle capacity and sales to the retail outlet would not affect regular sales, any price above the variable cost of $45 per pad would add to profits. The company should aggressively bargain for more than this price; $45 is simply the rock-bottom floor below which the company should not go in its pricing.