

# Chapter 9 Pricing, Costing, and Growth

**SOFTWARE  
ACTIVITY  
(OPTIONAL)**

## Spreadsheet Application

### Calculating Selling Prices and Break-Even Sales

**Objective:** Compute and compare selling prices for a product and resulting break-even sales based on variable costs, fixed costs, and markup rates.

#### Practice Situation

You have a unique talent for woodworking and have made custom fireplace mantelpieces for friends and family for years as a hobby. You have decided to start a business and sell your handmade fireplace mantelpieces to the public. Since you already own woodworking equipment, you only need a larger workspace for production of your product. You rent a nearby garage for \$1,150 per month. The electricity bill for the garage is expected to be \$70 per month.

Each mantelpiece requires \$27.50 of raw hardwoods and \$4.50 for sanding supplies, glue, varnish, and sealers. It takes 12 hours to complete a mantelpiece at a rate of \$16.00 per hour. Based on your research, the markup on handmade products for the home can range from 50 percent to 90 percent.

Determine the following costs, then answer the questions on the following pages.

- Total variable cost
- Total fixed cost
- Unit selling prices based on 60 percent markup or 90 percent markup
- Contribution margin based on 60 percent markup or 90 percent markup
- Break-even sales in units and dollars based on 60 percent markup or 90 percent markup

Product: American Heritage Fireplace Mantel Cost		
<b>Variable Costs</b>		
Direct Materials	Wood	
Supplies	Glue, Varnish, Stain, Sealer, Sanding Supplies	
Direct Labor	12 hours	
	<b>Total Variable Cost</b>	
<b>Fixed Costs</b>		
Rent		
Electricity		
	<b>Total Fixed Costs</b>	

Comparison of Selling Price		
	60% markup	90% markup
Unit price		
Comparison of Contribution Margin		
	60% markup	90% markup
Sales		
Less Variable Costs		
Contribution Margin		
Comparison of Break-Even Sales		
	60% markup	90% markup
Break-even sales in units		
Break-even sales in dollars		

**Spreadsheet Directions**

1. Start your spreadsheet software program and open problem **SA22.xls**.
2. Record the direct materials, supplies, and direct labor costs involved in creating one hand-made fireplace mantelpiece. Insert the formula to calculate the total variable cost. *Note: Format all dollar amounts to Currency, decimal places 2.*
3. Record the costs for the new workspace. Insert the formula to calculate the total fixed cost.
4. Insert the formulas to compute the unit price for a mantelpiece using a 60 percent markup and a 90 percent markup.
5. Compute the contribution margin for both markup options by subtracting the variable costs from the selling prices.
6. Insert the formula to compute break-even sales in units and in dollars for both markup options. *Note: Format the break-even sales in units to number, decimal places 1.*
7. Save your work to a new file labeled **SA22\*\*\*.xls**. (Replace \*\*\* with your initials.)
8. Print out a copy of your work if your teacher has instructed you to do so.

**Interpreting Results**

1. What is the variable cost for producing one handmade mantelpiece?  
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2. What is the selling price for the product using a 60 percent markup? Using a 90 percent markup?  
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3. What unit sales are required to break-even using a 60 percent markup? Using a 90 percent markup?  
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### Drawing Conclusions

1. If you choose to use a 60 percent markup on your product, what trade-off do you make in production levels to achieve a break-even sales level? Explain.

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2. Explain why the relationship between units produced and variable costs is different than the relationship between units produced and fixed costs.

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