

Assignment Day 4

- 1) A company records the following components of fixed and variable costs (in dollars) for a product.

Fixed Cost	
Plant maintenance	15,000
Salaries	40,000
Depreciation	100,000
Rent	8,000
Manufacturing Expenses	12,000
Advertising	5,000
Administrative Expenses	20,000
Variable Cost per unit	
Labor	3.00
Materials	5.00
Sales Commission	2.00

Assuming Sales Price per unit = \$15, develop a spreadsheet model to calculate the breakeven point using the above. Design your spreadsheet using effective spreadsheet engineering principles.

- 2) For a new product, sales volume in the first year is estimated to be 80,000 units and is projected to grow at a rate of 4% per year. The selling price is \$12 and will increase by \$0.50 each year. Per unit variable costs are \$3, and annual fixed costs are \$400,000. Per unit costs are expected to increase 5% per year. Fixed costs are expected to increase 8% per year. Develop a spreadsheet model to calculate the Net Present Value over a 3-year period, assuming a 4% discount rate.
- 3) A manufacturer of mp3 players is preparing to set the price on a new model. Demand is thought to depend on the price and is represented by the model $D = 2000 - 3P$. The accounting department estimates that the total costs can be represented by $C = 5000 + 4D$. Develop a model for the total profit and implement it on a spreadsheet. Using your model, construct a one-way data table to estimate the price for which profit is maximized.