

Break-Even Analysis: How Much Do You Need?

*Miki Merritt*CALCULATORS: Casio: *fx-9750G Plus* • Casio: *CFX-9850G Series*

Student Worksheet

Discussion

When setting up a business plan a break-even analysis is recommended. Through a series of calculations, this analysis gives you the amount of money your business needs to earn each month to cover expenses. The calculations take into consideration the business fixed expenses (i.e. rent/mortgage expenses, employee benefits, payroll), the business variable expenses (i.e. variable labor, office supplies), and the annual gross sales.

The break-even analysis serves as an estimate for the amount of sales your business needs to make each month in order to break even for the year. In this activity you will learn to use your calculator to do the break-even calculations.

Calculating a Break Even Analysis

Business "X" has \$9200 in fixed expenses each month and approximately \$2500 in variable expenses. It estimates that it will have \$170,000 in sales during its fiscal year. Using this information, let's calculate a break-even analysis for Business "X."

Step 1: Calculate the yearly fixed expenses.

$$\$9200 \times 12 = \$110,400$$

Step 2: Calculate the yearly variable expenses.

$$\$2500 \times 12 = \$30,000$$

Step 3: Calculate the Gross Margin of Sales: Sales minus Variable Expenses.

$$=\$170,000 - \$30,000$$

$$=\$140,000$$

Step 4: Calculate the Gross Margin Percent: Gross Margin divided by the total sales.

$$=\$140,000 \div 170,000$$

$$=82.4\%$$

Step 5: Calculate the Break-Even Sales: Total fixed expenses divided by Gross Margin Percent.

$$=\$110,400 \div 0.824$$

$$=\$133,980.58$$

Step 6: Calculate the Monthly Break-Even Amount: Break-Even Sales divided by 12.

$$=\$133,980.58 \div 12$$

$$=\$11,165.05$$

This company need to make at least \$11,165.05 each month in sales to break even.

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continued

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Using the Calculator

Find the calculations using the Casio calculator:

- Press the **AC/ON** button or the **MENU** key, then select **1** for **RUN**.
 - Type **9200 × 12 EXE** .
 - Type **2500 × 12 EXE** .
 - Type **170000 – SHIFT (-) EXE** .
 - Type **÷ 170000 EXE** .
 - Type **110,400 ÷ SHIFT (-) EXE** .
 - Type **÷ 12 EXE** .

9200×12	110400
2500×12	30000
170000-Ans	140000
MAT	

Ans/170000	140000
110400/Ans	0.8235294118
Ans/12	134057.1429
Ans/12	11171.42857
MAT	

Practice Problems

Calculate the "Break Even Analysis" on each of the three companies listed below:

Company A:

Monthly Fixed Expenses: \$12,000
 Monthly Variable Expenses: \$4,000
 Annual Sales: \$130,000

Company B:

Monthly Fixed Expenses: \$65,500
 Monthly Variable Expenses: \$20,000
 Annual Sales: \$1,248,661

Company C:

Monthly Fixed Expenses: \$34,950
 Monthly Variable Expenses: \$60,000
 Annual Sales: \$1,000,000
