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Part 3: Math Skills

Mixed Mathematics

Management is responsible for the success of a business. Some larger businesses have multiple stores, divisions, or subsidiaries with managers that are in charge of each. Business owners often create goals that each of their managers must meet. It is then the responsibility of each manager to execute the plans and meet these goals. Performance is then measured to determine if success is being achieved. One way to measure performance is with numerical or quantitative standards called *metrics*. Two popular metrics are profit and profit/assets. Profit metrics measure the amount of profit earned by the manager of each store, division, or subsidiary. This is simply sales minus expenses:

$$\text{sales} - \text{expenses} = \text{profit}$$

Profit/assets metrics measure the amount of profit earned in relation to the amount of assets that are invested. It is often expressed as a percentage and is sometimes called the return on assets.

$$\frac{\text{profit}}{\text{total assets}} = \text{return on assets, or profit/assets}$$

To convert a value to a percent, move the decimal point two places to the right.

Answer the following questions involving performance metrics.

1. Creative Crafts is a specialty retailer of art and craft supplies with two stores. Performance metrics for the entire business last year are as follows:

Total Sales: \$350,000

Total Expenses: \$247,000

Total Assets: \$630,000

- a. Calculate the profit for this business.

- b. Calculate the profit/assets percentage for this business.

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2. The following shows the total performance data of Creative Crafts divided between its two stores. Store #1 is larger than Store #2 and has more invested in assets for the building, store fixtures, and inventory.

Store #1:

Total Sales: \$200,000

Total Expenses: \$145,000

Total Assets: \$380,000

Store #2

Total Sales: \$150,000

Total Expenses: \$102,000

Total Assets: \$250,000

- a. Calculate the profit for Store #1.

- b. Calculate the profit/assets percentage for Store #1.

- c. Calculate the profit for Store #2.

- d. Calculate the profit/assets percentage for Store #2.

3. Refer to data in the previous problem. The manager of Store #1 believes his store is performing better than Store #2 because his profits are greater. Is he correct? Support your opinion with performance metrics.

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4. Dog Bonz manufactures rawhide bones for dogs. Net sales last year were \$610,000 and expenses were \$440,000. Assets in the company total \$1,900,000. Calculate the following metrics.

a. Calculate the profit for Dog Bonz.

b. Calculate the profit/assets percentage for Dog Bonz.

5. The owner of Dog Bonz considers starting a new and separate division to make dog toys. This new division will require an investment in assets totaling \$800,000. Sales are expected to be \$420,000 with projected expenses of \$390,000.

a. Calculate the expected profit for the new dog toy division.

b. Calculate the profit/assets percentage for the new dog toy division.

c. How does the profit/assets metric of this new division compare to the existing business?
