Name _____

Part 3: Math Skills

Multi-Step Mathematics

Businesses must set appropriate prices for their products to make a profit. However, companies do not set prices at random. There are a number of important policies and strategies involved, some of which involve multi-step mathematics.

Answer the following questions about pricing.

1. A unit price is based on a standard unit of measurement, such as an ounce or inch. It is used to compare the prices of different sized items. The formula for calculating unit price is:

$$\frac{\text{price}}{\text{number of units}} = \text{unit price}$$

Tropical Sun Coconut Water is sold at several retailers. Calculate the unit price of each container and determine which retailer offers the best value.

a. Better Health Store

Price: $2.79

Size: 12 ounce can

_____

_____

b. Fresh 'N More Market

Price: $4.99

Size: 20 ounce can

_____

_____

c. Mega Warehouse Club

Price: $39.99

Size: 24 pack case of 12 ounce cans

_____

_____

Name _____

2. A break-even point is when revenue from sales equals costs. It is calculated using the following formula:

$$\frac{\text{fixed costs}}{\text{selling price} - \text{variable costs}} = \text{break-even point}$$

Jogging Boy Company manufactures a unique jogging stroller that has a lightweight frame and holds up to three children. The stroller sells for $399. The variable cost to manufacturer each stroller is $165. The company's annual fixed costs are $135,000. How many strollers does Jogging Boy need to sell to break even for the year?

_____

_____

3. Cost-based pricing sets a base price by adding a markup to the product cost. It is calculated using the following formula:

$$\text{cost} + \text{markup} = \text{base price}$$

Kale Power makes a delicious snack bar that is very high in beta carotene and Vitamin K. The cost to make a 3 ounce bar is $0.55. Kale Power marks up the item by $0.95 to help cover fixed costs and contribute an acceptable profit to the business. What is the base price?

_____

_____

4. Another method of calculating a base price is to add a *percentage* markup to the product cost. Percentage markup is calculated using the following formula:

$$\text{cost} + (\text{cost} \times \text{markup percentage}) = \text{price}$$

Applying the same markup percentage to items can help achieve a more consistent level of profits. Banana Dragon manufactures high-quality water shirts for surfing, water skiing, and other water sports. The company adds a 90 percent markup to its product cost when setting the base price for its various styles. The following shows the product cost for three different shirt styles. Calculate the markup and base price for each style.

a. Big

Product Cost: $23

_____

_____

b. High Tide

Product Cost: $22

_____

_____