



Chapter 8

Markups and Markdowns: Perishables and Breakeven Analysis

Terminology

Cost

The price retailers pay to a manufacturer or supplier



Selling Price

The price retailers charge customers

Markup

Margin, or gross profit - The difference between the cost of bringing the goods into the store and the selling price

Operating expense (overhead)

The regular expenses of doing business such as rent, wages, utilities, etc.

Net Profit or Net Income

The profit remaining after subtracting the cost of bringing the goods into the store and the operating expenses

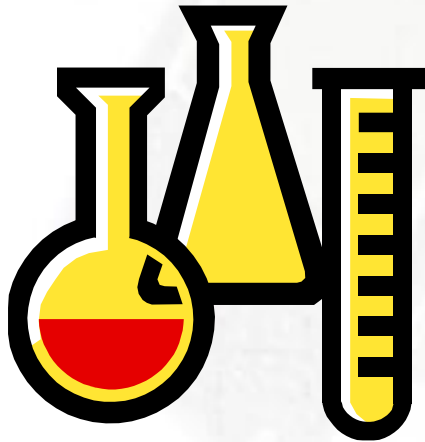
Basic Selling Price Formula

$$\text{Selling price (S)} = \text{Cost (C)} + \text{Markup (M)}$$

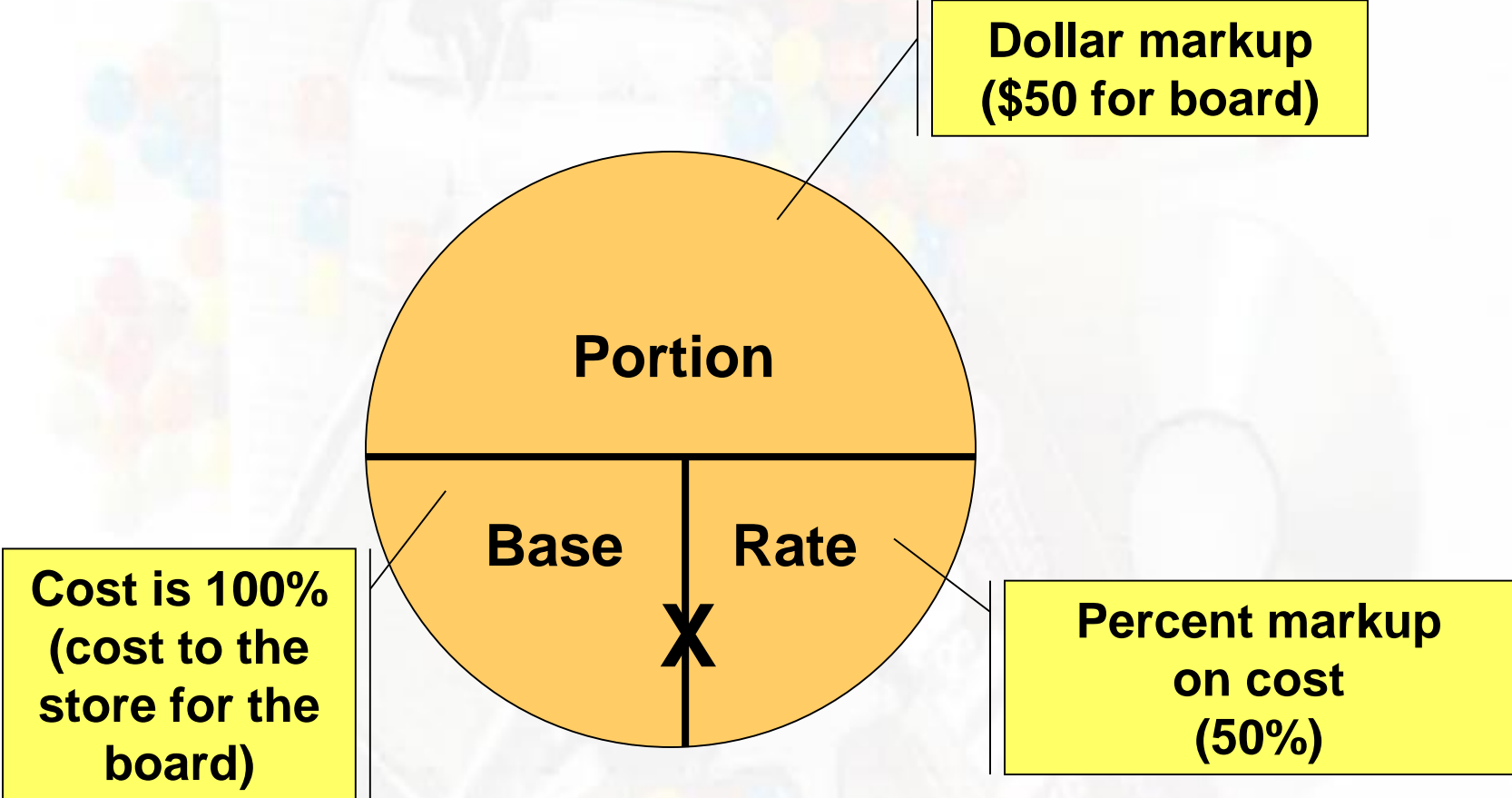
\$150
Surfboard

\$100 - Price
paid to
board
maker

\$50 -
Dollars to
cover
operating
expenses
and make a
profit



Markups Based on Cost (100%)



Calculating Dollar Markup and Percent Markup on Cost

Selling Price – Cost = Dollar Markup

$$\text{\$23} \quad - \text{\$18} = \quad \text{\$5}$$

Target buys Levi's Jeans for \$18 and plans to sell them for \$23.

What is Target's markup?

Percent Markup on Cost

$$\frac{\text{Dollar mark up}}{\text{cost}} = \frac{\text{\$5}}{\text{\$18}} = 27.78\%$$

What is the percent markup on cost?

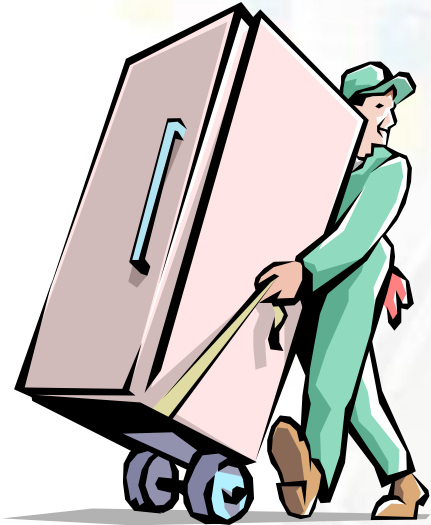
Selling Price = Cost + Markup

$$23 = 18 + .2778(18)$$

$$\text{\$23} = \text{\$18} + \text{\$5}$$

Check

Calculating Selling Price When You Know Cost and Percent Markup on Cost



Ray's Appliances bought a refrigerator for \$100 (cost).

To make desired profit, he needs a 65% markup on cost.

What is Ray's dollar markup?

What is his selling price?

$$S = C + M$$

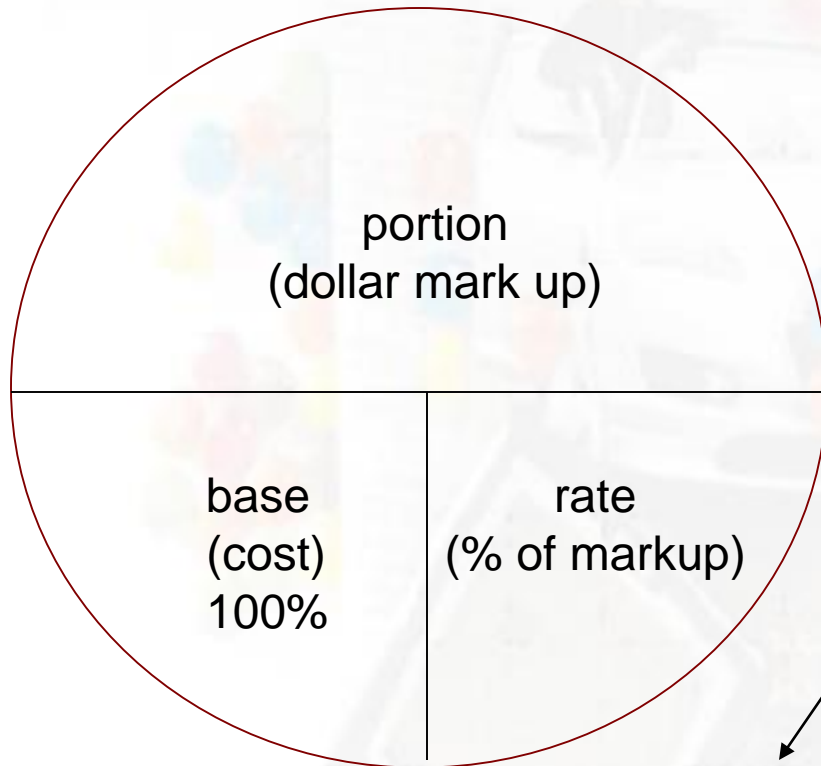
$$S = \$100 + .65(\$100)$$

$$S = \$100 + \$65$$

$$S = \$165$$

Dollar Markup

Calculating Cost When You Know Selling Price and Percent Markup on Cost



Jane's imported flower business sells floral arrangements for \$50.

To make her desired profit, Jane marks them up 40% on cost.

What do the flower arrangements cost Jane?

What is the dollar markup?

$$\begin{aligned}
 S &= C + M \\
 \$50 &= C + .40(C) \\
 \underline{\$50} &= \underline{1.40C} \\
 1.40 & \quad 1.40 \\
 \$35.71 &= C
 \end{aligned}$$

$$\begin{aligned}
 M &= S - C \\
 M &= \$50 - \$35.71 \\
 M &= \$14.29
 \end{aligned}$$

Markups Based on Selling Price (100%)

- Some retailers markup their goods on the selling price since sales information is easier to get than cost information. These retailers use retail prices in their inventory and report their expenses as a percent of sales.
- When businesses markup their goods on (of) selling price, they recognize *selling* price as 100%.

Markups Based on Selling Price (100%)

Dollar (\$) markup is the portion (P)


$$\begin{array}{rcc} \text{Cost} & + & \text{Markup} & = & \text{Selling Price} \\ 75\% & & 25\% & & 100\% \end{array}$$

Selling Price is 100% - the Base (B)

Percent (%) markup on (of) selling price is the rate (R)

Calculating Dollar Markup and Percent on Selling Price

Target buys Levi's Jeans for \$18 and plans to sell them for \$23.
What is Target's markup? What is the percent markup on (of) selling price?


$$\begin{array}{rclcl} \text{Selling Price} & - & \text{Cost} & = & \text{Dollar Markup} \\ 23 & - & 18 & = & 5 \end{array}$$

Percent Markup on selling price = $\frac{\text{dollar markup}}{\text{selling price}}$

$$\frac{\$5}{\$23} = 21.74\%$$

Check: Selling Price = Cost + Markup

$$23 = 18 + .2174(\$23)$$
$$\$23 = \$18 + \$5$$

Calculating Selling Price When You Know Cost and Percent Markup on (of) Selling Price

Ray's Appliances bought a refrigerator for \$100. To make desired profit, he needs a 65% markup on (of) selling price. What is Ray's selling price and dollar markup?

Proof

$$\begin{aligned}
 M &= S - C \\
 M &= \$285.71 - \$100 \\
 M &= \$185.71
 \end{aligned}$$

$$1S - .65S$$

$$\begin{aligned}
 S &= C + M \\
 S &= 100 + .65S \\
 \underline{-.65S} & & \underline{-.65S} \\
 \underline{.35S} &= \underline{100} \\
 .35 & & .35 \\
 S &= \$285.71
 \end{aligned}$$

Calculating Cost When You Know Selling Price and Percent Markup on Selling Price



Jane's imported flower business sells floral arrangements for \$50. To make her desired profit, she needs a 40% markup on (of) selling price. What is the dollar markup? What do the flower arrangements cost her?

$$\begin{array}{rcl} S & = & C + M \\ 50 & = & C + .40(\$50) \\ 50 & = & C + \$20 \\ \underline{-20} & & \underline{-\$20} \\ 30 & = & C \end{array}$$

Conversion

Converting Percent Markup on Cost to Percent Markup on Selling Price

Percent markup on cost
1+ Percent markup on cost

$$\frac{.2778}{1+.2778} = 21.74\%$$

Converting Percent Markup on Selling Price to Percent Markup on Cost

Percent markup on selling price
1- Percent markup on selling price

$$\frac{.2174}{1-.2174} = 27.78\%$$

Equivalent Markup

Percent markup on selling price	Percent markup on cost (round to nearest tenth percent)
20	25.0
25	33.3
30	42.9
33	49.3
35	53.8
40	66.7
50	100.0

Markdowns

$$\text{Markdown percent} = \frac{\text{Dollar markdown}}{\text{Selling price (original)}}$$



Sears marked down a \$50 tool set to \$36. What are the dollar markdown and the markdown percent?

$$\frac{\$14}{\$50}$$

28%

\$50-\$36
Markdown

Pricing Perishable Items



$$TC = 20 \text{ lbs.} \times \$0.50 = \$10$$

$$\begin{aligned} S &= C + M \\ TS &= TC + TM \\ TS &= \$10 + .75(\$10) \\ TS &= \$17.50 \end{aligned}$$

Sue bought 20 pounds of tomatoes to sell at her vegetable stand.

She expects 15% of the tomatoes to become spoiled and not salable.

The tomatoes cost her \$.50 per pound.

Sue wants a 75% markup on cost.

What should Sue charge for each pound of tomatoes so she will make her profit?

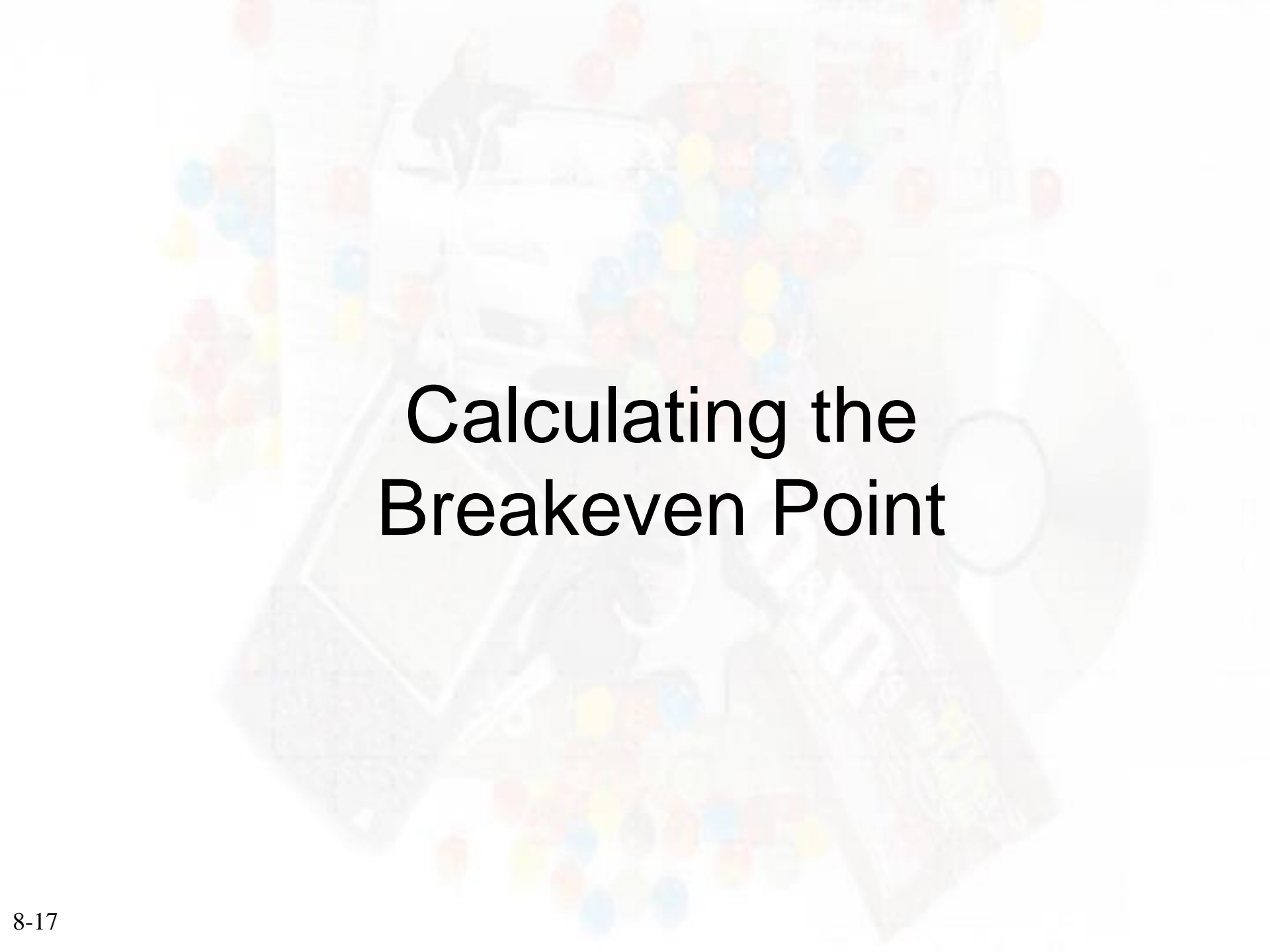
% of spoilage

$$20 \text{ lbs.} \times .15 = 3 \text{ lbs.}$$

Selling Price
per pound

$$\frac{\$17.50}{17 \text{ lbs.}} = \$1.03$$

$$20 \text{ lbs.} - 3 \text{ lbs}$$



Calculating the Breakeven Point

Terminology



Fixed Cost (FC) – Costs that do not change with increases or decreases in sales

Variable costs (VC) – Costs that do change in response to changes in the sales

Contribution Margin (CM) – The difference between selling price (S) and variable costs (VC).

Breakeven Point (BE) – The point at which the seller has covered all costs of a unit and has not made any profit or suffered any loss.

Selling Price (S) – Price of goods

Calculating a Contribution Margin (CM)

$$\begin{array}{r} \text{Selling Price (S)} \\ - \text{Variable Cost (VC)} \\ \hline \text{Contribution margin (CM)} \end{array}$$

Assume Jones Company produces pens that have a selling price (S) of \$2 and a variable cost (VC) of \$.80. Calculate the contribution margin

$$\begin{array}{r} 2.00 \text{ Selling price (S)} \\ - .80 \text{ Variable cost (VC)} \\ \hline 1.20 \text{ Contribution margin (CM)} \end{array}$$

Calculating a Breakeven Point (*BE*)

Breakeven

$$\text{point } (BE) = \frac{\text{Fixed Costs } (FC)}{\text{Contribution margin } (CM)}$$

Jones Company produces pens. The company has fixed costs (*FC*) of \$60,000. Each pen sells for \$2.00 with a variable cost (*VC*) of \$.80 per pen.

Breakeven

$$\text{point } (BE) = \frac{\$60,000 (FC)}{\$2.00 (S) - \$.80 (VC)} = 50,000$$

