PROFITS and MARK UP

Profit is the amount of money made on a sale. If the profit is negative, we say a loss has been made.

$$\text{Profit} = \text{Selling price} - \text{Cost price}$$

Mark-up is the amount added to the cost price to produce the selling price

$$\text{Selling price} = \text{Cost price} + \text{Mark-up}$$

PROFITS and MARK UP

Example 23 Determining profit

A manufacturer produces an item for $400 and sells it for $540.

a Determine the profit made.

b Express this profit as a percentage of the cost price.

SOLUTION

a $\text{Profit} = \$540 - \$400$
$= \$140$

b $\%\ \text{profit} = \frac{140}{400} \times 100\%$
$= 35\%$

EXPLANATION

$\text{Profit} = \text{selling price} - \text{cost price}$

$\%\ \text{profit} = \frac{\text{profit}}{\text{cost price}} \times 100\%$

PROFITS and MARK UP

Example 24 Calculating selling price from mark-up

An electrical store marks up all entertainment systems by 30%.
If the cost price of one entertainment system is $8000, what will be its selling price?

SOLUTION

Selling price = 130% of cost price
$= 1.3 \times 8000$
= $10 400

Alternative method

Mark-up = 30% of $8000
$= 0.3 \times 8000$
= $2400

$\therefore$ selling price = 8000 + 2400
= $10 400

EXPLANATION

Since there is a 30% mark-up added to the cost price (100%), it follows that the selling price is 130% of the cost price.

Change percentage to a decimal and evaluate.

Selling price = cost price + mark-up

Example 25 Finding the discount amount

Harvey Norman advertises a 15% discount on all equipment as a Christmas special. Find the sale price on a projection system that has a marked price of $18 000.

SOLUTION

$$\begin{aligned}\text{New price} &= 85\% \text{ of } \$18\,000 \\ &= 0.85 \times 18000 \\ &= \$15\,300\end{aligned}$$

EXPLANATION

Discounting by 15% means the new price is 85%, i.e. (100 − 15)% of the original price.

Example 26 Calculating sale saving

A toy shop discounts a toy by 10%, due to a sale. If the sale price was $10.80, what was the original price?

SOLUTION

Let $\$x$ be the original price.

$$\begin{aligned}0.9 \times x &= 10.8 \\ x &= 10.8 \div 0.9 \\ x &= 12\end{aligned}$$

The original price was $12.

EXPLANATION

The discount factor = 100% − 10% = 90% = 0.9. Thus $10.80 is 90% of the original price. Write an equation representing this and solve.

Write the answer in words.