

## Selling price and Cost price

To calculate the selling price of an item when given the percentage profit (gain) or percentage loss and the cost price, use the following formula:

$$\begin{array}{ccc} \text{percentage gain} & & \text{percentage loss} \\ \text{SP} = \frac{100 + \text{gain \%}}{100} \times \text{CP} & \text{or} & \text{SP} = \frac{100 - \text{loss \%}}{100} \times \text{CP} \end{array}$$

Examples

- (a) Mr. Taylor buys his car for \$128 000 and sells it at a loss of 20%. What was the selling price?
- (b) A merchant sold his waterlogged stock for \$120 000 thereby making a loss of 4% on the cost price. Find the cost price of his stock.

Solutions:

$$\begin{aligned} \text{(a) } \text{SP} &= \frac{100 - 20}{100} \times \frac{\$128\,000}{1} \\ &= \frac{80}{100} \times \frac{\$128\,000}{1} \\ &= \frac{\$10\,240\,000}{100} \\ &= \$102,400 \end{aligned}$$

$$\begin{aligned} \text{(b) } \text{SP} &= \frac{100 - \text{loss \%}}{100} \times \text{CP} \\ \text{CP} &= \frac{100}{100 - \text{loss \%}} \times \text{SP} \\ &= \frac{100}{100 - 4} \times \frac{\$120\,000}{1} \\ &= \frac{100}{96} \times \frac{\$120\,000}{1} \\ &= \frac{\$12\,000\,000}{96} = \$125,000 \end{aligned}$$