

### MARK-UPS AND DISCOUNTS

When a retailer buys goods from a wholesaler or manufacturer the price paid is known as the *cost price*.

A *mark-up* is usually added to this price in order to cover costs and make money.

The price shown on an item is known as the *retail price* (or *marked price*).

The amount the item is sold for is known as the *selling price*.

The amount added by a seller depends on many factors such as competition, turnover, freshness and storage life.

A *discount* (or *mark-down*) is the amount that is taken of the price of goods so that they sell faster (when they are in abundance, selling slowly, damaged or shop soiled).

#### EXAMPLE

1. A store applies a 30% mark-up on the item it sells. A particular item has a cost price of \$50.

a) How much will be added to the cost price?

$$\text{Increase} = \frac{30}{100} \times 50 = \$15$$

b) What is the retail price?

$$50 + 15 = \$65$$

2. What was the cost price of a dishwasher that had a marked price of \$1295?

A 40% mark-up means that the retail price is  $100 + 40 = 140\%$  of the cost price.

$$\text{So } 140\% = \$1295 \text{ thus } 1\% = \frac{1295}{140}.$$

$$100\% \text{ is } \frac{1295}{140} \times 100 = 925. \text{ Thus the cost price was } \$925$$

#### Important

The percentage that an item has been marked up by is calculated by using

$$\text{Percentage mark-up} = \frac{\text{mark-up}}{\text{cost price}} \times 100\%$$

If the discount is expressed as a percentage of the original price, it is called a *percentage discount*.

$$\text{Discount} = \text{Original price} - \text{Sale price}$$

$$\text{Percentage discount} = \frac{\text{discount}}{\text{retail price}} \times 100\%$$

### EXAMPLE

A vacuum cleaner is discounted from \$180 to \$126. Find the percentage discount.



$$\begin{aligned}\text{Discount} &= \text{Original price} - \text{Sale price} \\ &= \$180 - \$126 \\ &= \$54\end{aligned}$$

$$\% \text{ discount} = \frac{\text{Discount}}{\text{Original price}} \times 100\%$$

$$\begin{aligned}\% \text{ discount} &= \frac{54}{180} \times 100\% \\ &= 30\%\end{aligned}$$

The vacuum cleaner was discounted by 30%.

### QUESTION 1

1. Complete the following table.

	Original price (\$)	Discount (%)	Discount (\$)	Sale price (\$)	
a	Microwave oven	300	10%		
b	Furniture set	2030	5%		
c	Mirror	40	30%		
d	Necklace	1560	12.5%		

2. A hardware shop works on a 65% mark-up. What would the shop charge for a chainsaw with a cost price of \$280?

3. A takeaway store works on a mark-up of 120%. What was the cost price of a spring roll that sold for \$2.20?

4. A department store announced a 15% discount on every purchase for one day only. Elena decided to use the opportunity to buy new clothes for her daughter. She bought a dress normally priced at \$29, a 3-piece shorts set (normally \$30), pedal pushers (normally \$16), an embroidered top (normally \$18) and sandals (normally \$26).

Find:

a) the total cost of the clothes

b) the amount she had to pay after the 15% discount was applied

c) the amount of money Elena was able to save on these purchases by shopping on that day.

5. Healthway is promoting savings in its health and beauty products. For each of the items shown below, find:

a) the original price b) the percentage discount for any three of these items.

**Health & beauty  
COSTS LESS at Healthway**

Item	Current Price	Savings
Soap	\$3.99	Save up to 99c
STARK Hair Colour	\$9.57	Save 1.00
Purify Hand Cream	\$5.45	Save 46c
Vitamin C	\$3.99	Save 66c
Malt Vitamin B	\$14.99	Save 2.00
Immunity Garlic	\$7.49	Save 86c

## PROFIT AND LOSS

When an item is sold for more than it cost, the difference is said to be *profit*. It is customary to express profit as a percentage of the cost price:

Profit = Selling price - Cost price

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

Loss = Cost price - Selling price

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

### EXAMPLE

1. Find the percentage profit on an item that was bought for \$30 and later sold for \$38.

Cost Price (CP), Selling Price (SP)

$$\text{CP} = \$30; \text{SP} = \$38$$

$$\text{Profit} = \text{SP} - \text{CP}$$

$$\begin{aligned}\text{Profit} &= \$38 - \$30 \\ &= \$8\end{aligned}$$

$$\text{Percentage profit} = \frac{\text{Profit}}{\text{CP}} \times 100\%$$

$$\begin{aligned}\text{Percentage profit} &= \frac{8}{30} \times 100\% \\ &= 26.67\%\end{aligned}$$

2. Steffi runs a market jewelry stall. She spends \$450 on supplies to make 36 necklaces. She works on a profit margin of 85%. How much should she sell each necklace for?

Cost per necklace =  $450 \div 36 = \$12.50$

A profit of 85% means increase cost price by 85% ie 185% of cost price

185% of \$12.50 =  $\frac{185}{100} \times 12.5 = 23.125$  which we round to \$23.13 so she would probably sell each necklace for

\$23 or perhaps \$24.

### QUESTION 2

1. A local tradesman works on a profit margin of 140%. Calculate the selling price for a dining set that cost him \$2350 to make.

2. Find the percentage profit (to 2 decimal places) for each of the following items.

Item	CP (\$)	SP (\$)
Tracksuit	80	139.95
T-shirt	16	22.50

3. The following goods were sold at a garage sale. Find the percentage loss for each of the items, correct to 2 decimal places.

Item	CP (\$)	SP (\$)
Cutlery	40	8
Two bedside lamps	100	22

4. A shopkeeper buys 20 kg of cooking chocolate for \$50 and sells it in 500 g packets at \$3 each. Find the profit made and express it as a percentage of the cost price.

5. By selling a collection of coins for \$177, Igor makes a profit of 18%. What was the original cost of the collection?

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## INFLATION AND GST

Inflation is an increase in the price of goods and services. Over time, inflation reduces the purchasing power of a dollar, thereby lowering its value. For example, if the price of petrol rises, drivers must pay more to fill their tanks and they have less money available for other spending (e.g., eating out and buying clothing). The annual inflation rate in Australia is around 3%.

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### EXAMPLE

Amity receives a pay rise from \$53000 to \$54800. If the annual inflation rate is 3.4% has her salary kept up with inflation?

Pay increase =  $54800 - 53000 = \$1800$

Percentage increase =  $\frac{1800}{53000} \times 100 = 3.396... \% = 3.4\%$

Her salary has 'kept up' with inflation.

## GST

GST is short for goods and services tax. That is exactly what it is, a tax on goods and services. It is described as a broad-based consumption tax as it applies to all sorts of goods and services that are consumed by the general public.

GST is levied at a rate of 10%, which means that in order to calculate the GST to be added to goods or services you simply add 10% to the original price.

To calculate the GST included in the price divide the price by 11.

If you have goods to sell worth \$100, then 10% of \$100 is \$10 so the goods will be sold for \$110.

In reverse, \$110 divided by 11 is \$10 thus the GST is \$10.

Australian businesses must obtain an Australian Business Number (ABN) from the Australian Taxation Office before they begin trading. Most businesses must also add a Goods and Services Tax (GST) to their prices. Some items, such as basic food and some medical supplies, are exempt from GST. Businesses must pay the GST they have collected to the Federal Government when they lodge their Business Activity Statement (BAS), usually quarterly.

### QUESTION 3

1. A store increases their prices to stay in line with the rate of inflation. If the rate of inflation is 3.8%, calculate the new price of a television now priced at \$850.
2. How much GST should be added to each of these prices?
  - a) \$55 pair of jeans
  - b) \$90 pair of shoes
  - c) \$16 rose plant
  - d) \$12 book
3. Each of the following prices is GST-inclusive. Calculate the amount of GST included in each price. Express your answers in cents, correct to 2 decimal places.
  - a) \$9.50 hot BBQ chicken
  - b) \$4.85 pack of toilet paper
  - c) \$11.25 bottle of shampoo
  - d) \$5.80 pack of salted peanuts
4. Shaun buys T-shirts from a wholesaler for \$7.50. To calculate the selling price he works on a profit margin of 150% and then adds GST. Calculate the final selling price.
5. At the Great Gals end of year sale customers get a 10% discount on all goods. Will the discounted price be less than or the same as the original price before GST was added?