

# Work with percentage change

1 Teddy buys a DVD box set for £25

Later, he sells it for £17

a) Does Teddy make a profit or a loss? \_\_\_\_\_

b) How much profit or loss does he make?

£

c) Circle the fraction that is the most useful to work out Teddy's percentage profit or loss.

$\frac{8}{17}$

$\frac{8}{25}$

$\frac{17}{8}$

$\frac{17}{25}$

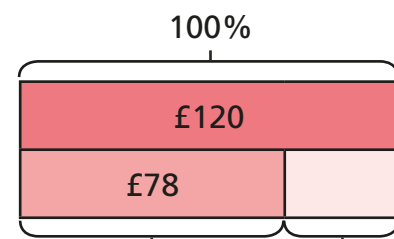
$\frac{25}{8}$

d) What percentage profit or loss does he make?

%

2 Miss Rose went shopping with £120

She spent £78



a) What percentage of her money did she spend?

%

b) What percentage of her money does she have left?

%

c) What is the connection between the two answers?

\_\_\_\_\_

\_\_\_\_\_

3 Complete the table.

The first row has been done for you.

| Cost price | Selling price | profit or loss | Percentage profit or loss |
|------------|---------------|----------------|---------------------------|
| £12        | £15           | £3 profit      | $\frac{3}{12} = 25\%$     |
| £10        | £8            |                |                           |
| £8         | £10           |                |                           |
| 80p        | £1            |                |                           |
| £25        | £40           |                |                           |
| £40        | £25           |                |                           |

4 Scott earns £40 a week.

He gets a pay rise and now earns £45 a week.



a) How much extra does Scott earn per week?

£

b) What is his percentage pay rise?

%

5 Dizcworld is a shop that sells CDs and records.

- In 2018, Dizcworld sold 8,500 CDs and 640 records.
- In 2019, Dizcworld sold 6,800 CDs and 1,040 records.

a) Work out the percentage increase in sales of records between 2018 and 2019

%

b) Work out the percentage decrease in sales of CDs between 2018 and 2019

%

c) Annie buys some records from Dizcworld.

The total cost of the records is £240, but Annie is given a discount and only pays £228

Work out the percentage discount Annie receives.

%

6 Whitney is training for a cycle race.

In the first week of training, she cycles 75 miles, averaging 18 mph.

In the second week of training, she cycles 105 miles, averaging 20 mph.

a) Work out the percentage increase in the distance she travels.

b) Work out the percentage increase in Whitney's speed.

7 The table shows the changes in world record times for some running events between the first recording of a record and the records in 2019

| Event            | First ever world record (year) | 2019 world record  |
|------------------|--------------------------------|--------------------|
| Men's 100 m      | 10.6 seconds (1912)            | 9.58 seconds       |
| Women's 100 m    | 13.6 seconds (1922)            | 10.49 seconds      |
| Men's 200 m      | 20.6 seconds (1951)            | 19.19 seconds      |
| Women's 200 m    | 27.8 seconds (1922)            | 21.34 seconds      |
| Men's marathon   | 2 hours 55 minutes (1908)      | 2 hours 1 minute   |
| Women's marathon | 3 hours 40 minutes (1912)      | 2 hours 17 minutes |

Before calculating, which event do you think has had the greatest percentage decrease in the world record time?

Work out the percentage decrease in time for each event and see if you were correct.

Men's 100 m  %

Women's 200 m  %

Women's 100 m  %

Men's marathon  %

Men's 200 m  %

Women's marathon  %