



# HOW TO WORK OUT PERCENTAGE CHANGE

Follow these 3 simple steps to find the percentage change between 2 numbers.

- **Step 1)** Subtract the original number from the new number.
- **Step 2)** Divide this number by the original number.
- **Step 3)** Multiply this answer by 100 to convert to a percentage.
  - This gives you the percentage change.
  - If this final answer is **positive**, you have a percentage **increase**, where the new number is larger than the original number.
  - If this final answer is **negative**, then you have a percentage **decrease**, where the new number is lower than the original number.

## Example 1

A toy normally costs \$450. It is sold for \$360 in a sale. Find the percentage change.

Step 1) New number – original number

$$360 - 450 = -90$$

Step 2) Divide by original number

$$-90 \div 450 = -0.2$$

Step 3) Multiply by 100

$$-0.2 \times 100 = -20\%$$

**Answer:**

The percentage change is -20%.

## Example 3

Sally fills her car with 12 gallons of gas. She goes on a journey and ends up with just 7.5 gallons left in the tank.

What is the percentage change?

Step 1) New number – original number

$$7.5 - 12 = -4.5$$

Step 2) Divide by original number

$$-4.5 \div 12 = -0.375$$

Step 3) Multiply by 100

$$-0.375 \times 100 = -37.5\%$$

**Answer:**

The percentage change is -37.5%.

She finished the journey with 37.5% less gas than when she started.

## Example 2

Tyger buys a car for \$3200. He renovates it and eventually sell it for \$3800. Work out the percentage increase he sold the car for.

Step 1) New number – original number

$$3800 - 3200 = 600$$

Step 2) Divide by original number

$$600 \div 3200 = 0.1875$$

Step 3) Multiply by 100

$$0.1875 \times 100 = 18.75\%$$

**Answer:**

He sold the car for 18.75% more than he paid for it.

## Example 4

On a winter's day the temperature starts off at 24°F. By 2:00pm, it has risen to 50°F. What is the percentage change?

Step 1) New number – original number

$$50 - 24 = 26$$

Step 2) Divide by original number

$$26 \div 24 = 1.08333$$

Step 3) Multiply by 100

$$1.083333 \times 100 = 108.3\% \text{ (to 1dp)}$$

**Answer:**

The percentage change is 108.3%.

The temperature has risen (or increased) by 108.3%.

