



## QT Repeated percentage change

1. There is a 20% reduction from normal prices in a shop sale. On Saturday the manager decides to offer a further 10% discount.

Ahmedyar says "Prices have now been reduced by 30%."

Is Ahmedyar correct? You must show your working.

2. Florence invests £3500 for 3 years in a savings account. She gets 2% per annum compound interest for the first year, then  $x\%$  compound interest for 2 years.

Florence has £3677.90 at the end of 3 years.

Work out the value of  $x$ .



3. Joseph invests £2600 for 5 years in a savings account. He gets 3% per annum compound interest for the first year, then  $x\%$  compound interest for 4 years.

Joseph has £2956.01 at the end of 5 years.

Work out the value of  $x$ . Give your answer correct to 2 decimal places.

4. The population of a small town increases by  $x\%$  each year. The population is expected to increase by 36% in the next 8 years. Work out the value of  $x$  giving your answer to 1 decimal place.

5. A workman's van is decreasing by  $x\%$  in value each year. After 5 years the van will be worth 50% of the price it was bought for. Work out the value of  $x$  giving your answer to 1 decimal place.



6. The radius of a circle increases by 30%. Find the increase in the circle's area.

7. A bacteria strain is increasing its population by 15% each hour. Calculate the percentage increase after 4 hours.