Repeated Percentage Change

Grade 6 topic · Higher tier · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Questions 1–15 (64 marks) build up to the harder Grade 8–9 style questions at the end; aim to complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 88 marks.

Warm-up

1 £200 is invested at 2% compound interest per year. Work out the value after 2 years, to the nearest penny. **[4 marks]**

Answer _____

2 £800 is invested at 10% compound interest per year. Work out the value after 5 years, to the nearest penny. **[4 marks]**

Answer _____

3 £200 is invested at 4% compound interest per year. Work out the value after 2 years, to the nearest penny. **[4 marks]**

Answer _____

4 £2000 is invested at 2% compound interest per year. Work out the value after 5 years, to the nearest penny. **[4 marks]**

Answer _____

5 £500 is invested at 20% compound interest per year. Work out the value after 4 years, to the nearest penny. **[4 marks]**

Answer _____

Core

6 A car worth £10000 depreciates by 4% each year. Work out its value after 5 years, to the nearest pound. **[4 marks]**

Answer _____

7 A car worth £25000 depreciates by 2% each year. Work out its value after 6 years, to the nearest pound. **[4 marks]**

Answer _____

8 A car worth £25000 depreciates by 4% each year. Work out its value after 5 years, to the nearest pound. **[4 marks]**

Answer _____

9 A car worth £25000 depreciates by 20% each year. Work out its value after 4 years, to the nearest pound. **[4 marks]**

Answer _____

10 A car worth £10000 depreciates by 2% each year. Work out its value after 3 years, to the nearest pound. **[4 marks]**

Answer _____

Stretch

11 The population of a town is 20,000. It increases by 2% each year. Work out the population after 5 years to the nearest whole number. **[5 marks]**

Answer _____

12 A price rises by 10% then falls by 10%. Work out the overall percentage change. **[5 marks]**

Answer _____

13 A price increases by 3% each year for 2 years. Write the single multiplier for the whole period to 4 decimal places. **[4 marks]**

Answer _____

14 An investment grows by 2% in year 1 and 5% in year 2. Work out the overall percentage increase to 1 decimal place. **[5 marks]**

Answer _____

15 The value of a house rises by 5% per year. By what percentage does it rise over 3 years? Give your answer to 1 decimal place. **[5 marks]**

Answer _____

Challenge

16 £1000 is invested at 2% compound interest per year. How many whole years until it has more than doubled? **[5 marks]**

Answer _____

17 After 3 years at 5% compound interest per year an investment is worth £5788.13. Work out the original amount. **[5 marks]**

Answer _____

18 A bacteria colony of 800 doubles every hour. How many are there after 6 hours? **[4 marks]**

Answer _____

19 A value falls by 20% per year. After how many whole years is it first less than half its starting value? **[5 marks]**

Answer _____

20 Work out the compound interest on £500 at 20% for 6 years. **[5 marks]**

Answer _____