

GCSE Maths: Compound interest, growth and decay (Foundation): answers

GCSE Maths - Percentages - Foundation - Lesson 5.8

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch05-percentages/foundation/compound-interest-growth-and-decay/

Exercise 5M Compound interest, growth and decay Calculator allowed

1 Work out the total amount in each case. Give your answers to the nearest penny.

- (a) £1,000 at 5% per year for 2 years

Answer: £1,102.50

- (b) £2,000 at 3% per year for 3 years

Answer: £2,185.45

- (c) £5,000 at 4% per year for 2 years

Answer: £5,408

- (d) £800 at 2% per year for 3 years

Answer: £848.97

- (e) £1,500 at 6% per year for 2 years

Answer: £1,685.40

- (f) £10,000 at 1.5% per year for 4 years

Answer: £10,613.64

2 Work out the total amount year by year in each case.

- (a) £1,000 at 10% per year for 2 years

Answer: £1,210

- (b) £200 at 5% per year for 2 years

Answer: £220.50

- (c) £500 at 20% per year for 2 years

Answer: £720

3 Work out the compound interest earned in each case.

- (a) £4,000 at 2.5% per year for 2 years

Answer: £202.50

- (b) £6,000 at 3% per year for 2 years

Answer: £365.40

- (c) £2,500 at 4% per year for 3 years

Answer: £312.16

- 4 Eve invests £3,000 for 3 years at 4% compound interest per year.

- (a) Work out the total amount at the end of 3 years.

Answer: £3,374.59

- (b) Work out the compound interest she earns.

Answer: £374.59

- 5 Hiba invests £2,000 for 3 years at 4% per year. Work out how much more interest she gets if the interest is compound interest rather than simple interest.

Answer: £9.73

- 6 A town has a population of 25,000. It grows by 3% each year. Work out the population after 4 years, to the nearest whole number.

Answer: 28,138

- 7 A scientist starts with 500 bacteria. The number of bacteria increases by 20% every hour. Estimate the number after 5 hours, to the nearest whole number.

Answer: 1,244

- 8 A car is worth £14,000 when new. It loses 15% of its value every year.

- (a) Work out the value of the car after 3 years.

Answer: £8,597.75

- (b) Work out the value of the car after 5 years.

Answer: £6,211.87

- 9 A new phone costs £800. It loses 25% of its value each year. Work out its value after 2 years. Work year by year.

Answer: £450

- 10 Joe says, "£1,000 at 10% compound interest for 2 years gives the same as 20% simple interest, because $10\% + 10\% = 20\%$." Is he right? Work out both totals.

Answer: No. £1,210 and £1,200

- 11 Dan wants to work out the value of £1,000 after 3 years at 5% compound interest. He writes: $1,000 \times 1.15 = £1,150$. Explain his mistake and work out the correct value.

Answer: £1,157.63

- 12 £1,000 is invested at 5% compound interest per year. Show that the interest earned in year 2 is £52.50. Explain why it is more than the interest in year 1.

Answer: £52.50