

Name:

Date:

Compound Interest and Depreciation

GCSE

Edexcel

Mathematics

Grade (9-1)

Mark

Grade

39

Materials

For this paper you must have:

- Ruler
- Pencil and Rubber
- Scientific calculator, which you are expected to use when appropriate

Instructions

- Answer all questions
- Answer questions in the space provided
- All working must be shown

Information

- The marks for the questions are shown in brackets

- 1** Anna invested £7000 for 2 years in a savings account.
She was paid 5% per annum compound interest.

How much did Anna have in her savings account after 4 years?

.....
(Total for question 1 is 2 marks)

- 2** A man bought a car that had a value of £14 000
Each year the value of the car depreciates by 22%.

Work out the value of the car at the end of three years.

.....
(Total for question 2 is 2 marks)

- 3** Lucy invests £2200 for 3 years at 6% per annum compound interest.
Calculate the value of the investment at the end of 4 years.

.....
(Total for question 3 is 2 marks)

4 £900 is deposited in a bank paying 0.5% compound interest per annum.
What is the balance after three years?

Leave
blank

.....
(Total for question 4 is 2 marks)

5 The value of a vehicle depreciates by 25% each year.
At the end of 2017 the value of the vehicle was £7640.

Work out the value of the vehicle at the end of 2016.

.....
(Total for question 5 is 2 marks)

6 A car is bought for £1700 but depreciates in value at the rate of 8% per year.
Calculate how much the car is worth after five years.

.....
(Total for question 6 is 2 marks)

7 Gaby wants to invest £2000 for 2 years in bank. She has two offers.

Bank A:
 Nateast
 Compound Interest 4% for
 the first year 1% for each
 extra year.

Bank B:
 HSBG
 Compound Interest 5% for the
 first year 0.5% for each extra year
 At the end of 2 years.

Which bank should she invest her £2000 in to get more money?

.....
(Total for question 7 is 4 marks)

8 Jeff invests £4500 at a compound interest rate of 5% per annum.
 At the end of n complete years, the investment has grown to £5469.78.

Find the value of n .

.....
(Total for question 8 is 3 marks)

Leave
blank

- 9 The value of a vehicle depreciates by 25% each year.
At the end of 2017, the value of the vehicle was £7640.

Work out the value of the vehicle at the end of 2016.

.....
(Total for question 7 is 3 marks)

- 10 Calculate the total loss after 4 years if £2,364,000 is reduced by 7% yearly.

.....
(Total for question 8 is 2 marks)

- 11** Mathew bought a new car.
Each year, the value of her car depreciated by 12%.

Calculate the number of years after which the value of her car was 47% of its value when new.

.....
(Total for question 9 is 3 marks)

- 12** Mr.Haris takes out a loan of £800 and the bank charges him 15% compound interest per year.
If he doesn't pay off any of the loan in 4 years, how much would he owe the bank?

.....
(Total for question 10 is 2 marks)

13 £900 is deposited in a bank paying 0.5% compound interest per annum.
What is the balance after 3 years and 8 months?

Leave
blank

.....
(Total for question 11 is 2 marks)

14 A car is bought for £1500 but depreciates in value at the rate of 8% per year.
What is the total depreciation of the car after two years, expressed as a percentage?

.....
(Total for question 12 is 3 marks)

15 You invest £4000 in a fund which earns 11% compound return per year.
 How much would the fund be worth after 10 years, given that you removed half of the balance after 5 years?

.....
(Total for question 13 is 3 marks)

16 Hennery invests £500 on 1st January 2014 at a compound interest rate of X% per annum.
 The value, £V, of this investment after n years is given by the formula ;

$$V = 500 \times (1.045)^n$$

(a) Find the value of X.

(b) Find the value of V after 15 years.

.....
(1)

.....
(1)

(Total for question 14 is 2 marks)