

GCSE Predicted Topic Questions

Compound Interest & Depreciation

Example 1

Toby wants to invest £8000 for 3 years.
He can choose between Bank A and Bank B.

Bank A

1.2% compound
interest per annum

Bank B

2% compound interest
in the first year
1% compound interest
for each extra year

Which bank will give Toby the most interest after three years.

Bank A

$$\begin{aligned}\text{Total interest} &= 8000 \times (1.012)^3 \\ &= 8291.47\end{aligned}$$

Bank B

$$\begin{aligned}\text{Total interest} &= 8000 \times (1.02) \times (1.01)^2 \\ &= 8324.02\end{aligned}$$

Bank B will give the most interest to Toby.

Example 2

Fearne invests £5600 in a saving account.
She gets 2% per annum compound interest.
After n years, Fearne has £6061.62 in her account.
Work out the value of n .

Here we use formula, $A = P(1 + r/100)^n$

$$6061.62 = 5600 \times (1 + 2/100)^3$$

$$6061.62 = 5600 \times (1.02)^3 = 5942.76$$

$$6061.62 = 5600 \times (1.02)^4 = 6061.62.$$

Fearne has £6061.62 in her account after 4 years.

GCSE Predicted Topic Questions

Compound Interest & Depreciation

- 1 Nick invests £2600 in a saving account.
She gets 2% per annum compound interest.

After n years, Nick has £2759.1408 in his account.
Work out the value of n .

(Total for question 1 is 2 marks)

- 2 Alice is going to invest some money for 5 years.
She can choose from two options:

Investment A: 2.5% compound interest per annum
Investment B: 2.9% simple interest per annum

Which investment should Alice choose
You must show your working.

Alice should choose Investment: -----

(Total for question 2 is 4 marks)

GCSE Predicted Topic Questions

- 3 Matt wants to invest £5000 for five years.
He can choose between Bank A and Bank B.

Bank A

1.2% compound
interest per annum

Bank B

3% compound interest
in the first year
2% compound interest
for each extra year

Which bank will give Matt the most interest after five years.

You must show your working.

(Total for question 3 is 4 marks)

- 4 If a principal of £ 392 was invested at a rate of 7% compounded annually and terminates with a balance of £ 513.83, how long was the money invested for?

You must show your working.

(Total for question 4 is 2 marks)

GCSE Predicted Topic Questions

5 Johnny invested £2400 for n years in a saving account.

He was paid 7.5% per annum compound.

At the end of n years he had £3445.51 in the saving account.

Work out the value of n .

(Total for question 5 is 2 marks)

6 Leigh-Anne is going to invest some money for three years.

She can choose from two options:

Investment A: 2.7% compound interest per annum

Investment B: 2.5% simple interest per annum

Which investment should she choose

You must show your working.

Leigh-Anne should choose Investment: -----

(Total for question 6 is 4 marks)

GCSE Predicted Topic Questions

- 7 Jaspir wants to invest £2000 for 2 years in the same bank.

The International Bank

Compound Interest

3% for the first year
1% for each extra year

The Friendly Bank

Compound Interest

4% for the first year
0.5% for each extra year

At the end of 2 years, Jaspir wants to have as much money as possible.

Which bank should he invest her £ 2000 in?

(Total for question 7 is 4 marks)

- 8 Henry invest £35000 at a compound interest rate of 4% per annum.

At the end of n complete years the investment has grown to £37856.

Find the value of n .

(Total for question 8 is 2 marks)

GCSE Predicted Topic Questions

- 9 (a) An initial deposit of £1400 is invested for 3 years. The interest payments occur annually at 6% compound interest. Work out the amount of interest earned after this time.
- (b) After the first 3 years, the interest rate falls to 2%. How much would the investment be worth after a further 4 years?

a: ----- b: -----

(Total for question 9 is 4 marks)