Chhetri Academy

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GCSE MATHS

Ratio, proportion and rates of change

Edexcel 1MA1 | Subtopic collection Topic 33

Compound interest, growth and decay

Foundation tier

Past paper question booklet

16	2012-2024	Foundation
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

Question 01

17 £500 is invested at a simple interest rate of 3% per year.

After how many years is the total interest £60?

..... years

(Total for Question 17 is 3 marks)

***15** Here are two schemes for investing £2500 for 3 years.

Scheme A
gives £5.35 interest each month.

Scheme B
gives 3% simple interest each year.

Which scheme gives the most total interest over the 3 year period?
You must show all your working.

(Total for Question 15 is 4 marks)

*9 Here are two different ways to invest £2500

Investment A	Investment B
Invest £2500 for 3 years and get £5 interest each month.	Invest £2500 for 3 years at 2.5% simple interest each year.

Which investment gives the most interest?

(Total for Question 9 is 4 marks)

***18** Here is information about two investments.

Investment A Invest £2400 for 3 years and get £8 each month.

Investment B Invest £2400 for 3 years at a rate of 3.5% per year simple interest.

Which is the better investment?
You must show your working.

(Total for Question 18 is 5 marks)

21 Jane invests £300 at a simple interest rate of 4.5% per year.
At the end of each year Jane gives the interest to a charity.

Work out the least number of years it will take for the total amount given to the charity to be greater than £50

.....

(Total for Question 21 is 3 marks)

16 Harry invests £5000 for 3 years.
He gets simple interest of 4% per year.

Work out the total interest Harry gets.

£.....

(Total for Question 16 is 3 marks)

22 Anil wants to invest £25 000 for 3 years in a bank.

Personal Bank	**Secure Bank**
Compound Interest	Compound Interest
2% for each year	4.3% for the first year 0.9% for each extra year

Which bank will give Anil the most interest at the end of 3 years?
You must show all your working.

(Total for Question 22 is 3 marks)

23 Northern Bank has two types of account.
Both accounts pay compound interest.

Cash savings account
Interest
2.5% per annum

Shares account
Interest
3.5% per annum

Ali invests £2000 in the cash savings account.
Ben invests £1600 in the shares account.

(a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

(b) Does this affect who will get the most interest by the end of 3 years?
Give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 23 is 5 marks)

25 Katy invests £200 000 in a savings account for 4 years.
The account pays compound interest at a rate of 1.5 % per annum.

Calculate the total amount of interest Katy will get at the end of 4 years.

£.....

(Total for Question 25 is 3 marks)

26 A new phone cost £679
The value of the phone decreases at a rate of 4% per year.

Work out the value of the phone at the end of 3 years.

£.....

(Total for Question 26 is 3 marks)

23 Ella invests £7000 for 2 years in an account paying compound interest.

In the first year, the rate of interest is 3%
In the second year, the rate of interest is 1.5%

Work out the value of Ella's investment at the end of 2 years.

£.....

(Total for Question 23 is 3 marks)

27 Tamsin buys a house with a value of £150 000
The value of Tamsin's house increases by 4% each year.

Rachel buys a house with a value of £160 000
The value of Rachel's house increases by 1.5% each year.

At the end of 2 years, whose house has the greater value?
You must show how you get your answer.

(Total for Question 27 is 4 marks)

24 Andrew invests £4500 in a savings account for 2 years.
The account pays compound interest at a rate of 3.4% per year.

Calculate how much Andrew has in this savings account at the end of the 2 years.

£.....

(Total for Question 24 is 2 marks)

15 £3500 is invested in a bank for 6 years.
The bank pays **simple** interest at a rate of 2.5% per year.

Work out the total amount of simple interest paid.

£.....

(Total for Question 15 is 2 marks)

25 A company has 25 000 workers.
The number of workers increases at a rate of 6% per year for 3 years.

Calculate the total number of workers at the end of the 3 years.

.....

(Total for Question 25 is 4 marks)

26 Peter invests £4500 in a savings account for 3 years.
He gets 1.8% per year compound interest.

Work out the total amount of interest Peter gets.

£.....

(Total for Question 26 is 3 marks)