

INTEREST AND DEPRECIATION

Pearson Edexcel – Thursday 4 June 2020 - Paper 2 (Calculator) Higher Tier

1.

8 Tariq buys a laptop.

He gets a discount of 5% off the normal price.
Tariq pays £551 for the laptop.

(a) Work out the normal price of the laptop.

£.....
(2)

Joan invests £6000 in a savings account.

The savings account pays compound interest at a rate of

2.4% for the first year
1.7% for each extra year.

(b) Work out the value of Joan's investment at the end of 3 years.

£.....
(3)

(Total for Question 8 is 5 marks)

2.

- 2 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 2 is 3 marks)

3.

- 10** Marie invests £8000 in an account for one year.
At the end of the year, interest is added to her account.

Marie pays tax on this interest at a rate of 20%
She pays £28.80 tax.

Work out the percentage interest rate for the account.

..... %

(Total for Question 10 is 3 marks)

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Higher Tier

4.

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

<p>Cash savings account Interest 2.5% per annum</p>
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<p>Shares account Interest 3.5% per annum</p>
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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 4 is 5 marks)

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier

5.

- 9 Jean invests £12 000 in an account paying compound interest for 2 years.

In the first year the rate of interest is $x\%$

At the end of the first year the value of Jean's investment is £12 336

In the second year the rate of interest is $\frac{x}{2}\%$

What is the value of Jean's investment at the end of 2 years?

£.....

(Total for Question 9 is 4 marks)

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Higher Tier

6.

9 Jack bought a new boat for £12 500

The value, £ V , of Jack's boat at the end of n years is given by the formula

$$V = 12\,500 \times (0.85)^n$$

(a) At the end of how many years was the value of Jack's boat first less than 50% of the value of the boat when it was new?

(2)

A savings account pays interest at a rate of $R\%$ per year.
Jack invests £5500 in the account for one year.

At the end of the year, Jack pays tax on the interest at a rate of 40%.
After paying tax, he gets £79.20

(b) Work out the value of R .

(3)

(Total for Question 9 is 5 marks)

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

<p>Personal Bank Compound Interest 2% for each year</p>	<p>Secure Bank Compound Interest 4.3% for the first year 0.9% for each extra year</p>
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Which bank will give Anil the most interest at the end of 3 years?
You must show all your working.

(Total for Question 6 is 3 marks)

Pearson Edexcel - Tuesday 13 June 2017 - Paper 3 (Calculator) Higher Tier

8.

- 10** Naoby invests £6000 for 5 years.
The investment gets compound interest of $x\%$ per annum.
At the end of 5 years the investment is worth £8029.35
Work out the value of x .

(Total for Question 10 is 3 marks)

Pearson Edexcel - Specimen Papers Set 2 - Paper 3 (Calculator) Higher Tier

9.

9 Ibrar bought a house for £145 000

The value of the house depreciated by 4% in the first year.
The value of the house depreciated by 2.5% in the second year.

Ibrar says,

“ $4 + 2.5 = 6.5$ so in two years the value of my house depreciated by 6.5%”

(a) Is Ibrar right?

You must give a reason for your answer.

(2)

The value of Ibrar’s house increases by $x\%$ in the third year.
At the end of the third year the value of Ibrar’s house is £140 000

(b) Work out the value of x .

Give your answer correct to 3 significant figures.

(3)

(Total for Question 9 is 5 marks)

- 6 Toby invested £7500 for 2 years in a savings account.
He was paid 4% per annum compound interest.

How much money did Toby have in his savings account at the end of 2 years?

£

(Total for Question 6 is 2 marks)

Pearson Edexcel - Specimen Papers Set 1 - Paper 3 (Calculator) Higher Tier

11.

- 8 Ian invested an amount of money at 3% per annum compound interest.
At the end of 2 years the value of the investment was £2652.25

(a) Work out the amount of money Ian invested.

£
(3)

Noah has an amount of money to invest for five years.

Saver Account 4% per annum compound interest.	Investment Account 21% interest paid at the end of 5 years.
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Noah wants to get the most interest possible.

- (b) Which account is best?
You must show how you got your answer.

(2)

(Total for Question 8 is 5 marks)

Pearson Edexcel - Sample Paper 2 - (Calculator) Higher Tier

12.

10 Katy invests £2000 in a savings account for 3 years.

The account pays compound interest at an annual rate of

2.5% for the first year

$x\%$ for the second year

$x\%$ for the third year

There is a total amount of £2124.46 in the savings account at the end of 3 years.

(a) Work out the rate of interest in the second year.

.....
(4)

Katy goes to work by train.

The cost of her weekly train ticket increases by 12.5% to £225

(b) Work out the cost of her weekly train ticket before this increase.

£.....
(2)

.....
(Total for Question 10 is 6 marks)

Pearson Edexcel - Thursday 9 June 2016 - Paper 2 (Calculator) Higher Tier

13.

15 This notice was in a car magazine.

Most new cars lose more than half of their value
in the first three years

Paul bought a new car.
The value of the car was £15 000

In the first year, the value of the car depreciated by 23%.
After the first year, the value of the car depreciated by 18% each year.

Work out if Paul's car lost more than half of its value by the end of three years.

(Total for Question 15 is 4 marks)

Pearson Edexcel - Wednesday 4 November 2015 - Paper 1 (Non-Calculator) Higher Tier

14.

1 Sean wants to go on holiday.
He is going to get a loan of £720 to help pay for the holiday.

Sean will have to pay back the £720 plus interest of 15%.
He will pay this back in 12 equal monthly installments.

How much money will Sean pay back each month?

£

(Total for Question 1 is 4 marks)

*14 Peter has £20 000 to invest in a savings account for 2 years.

He finds information about two savings accounts.

<p>Bonus Saver</p> <p>Compound interest</p> <p>4% for the first year then 1.5% each year</p>	<p>Fixed Rate</p> <p>Compound interest</p> <p>2.5% each year</p>
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Peter wants to have as much money as possible in his savings account at the end of 2 years.

Which of these savings accounts should he choose?

(Total for Question 14 is 4 marks)

18 Katie invests £200 in a savings account for 2 years.

The account pays compound interest at an annual rate of

3.3% for the first year

1.5% for the second year

(a) Work out the total amount of money in Katie's account at the end of 2 years.

£.....

(3)

Katie travels to work by train.

The cost of her weekly train ticket increases by 12.5% to £225

Katie's weekly pay increases by 5% to £535.50

**(b)* Compare the increase in the amount of money Katie has to pay for her weekly train ticket with the increase in her weekly pay.

(3)

(Total for Question 18 is 6 marks)

*14 Viv wants to invest £2000 for 2 years in the same bank.

<p>The International Bank</p> <p>Compound Interest</p> <p>4% for the first year 1% for each extra year</p>

<p>The Friendly Bank</p> <p>Compound Interest</p> <p>5% for the first year 0.5% for each extra year</p>
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At the end of 2 years, Viv wants to have as much money as possible.

Which bank should she invest her £2000 in?

(Total for Question 14 is 4 marks)

16 Derek buys a house for £150 000
He sells the house for £154 500

(a) Work out Derek's percentage profit.

.....%
(3)

Derek invests £154 500 for 2 years at 4% per year compound interest.

(b) Work out the value of the investment at the end of 2 years.

£

(3)

(Total for Question 16 is 6 marks)

Pearson Edexcel - Wednesday 13 June 2012 - Paper 2 (Calculator) Higher Tier

19.

- 17 Liam invests £6200 for 3 years in a savings account.
He gets 2.5% per annum compound interest.

How much money will Liam have in his savings account at the end of 3 years?

£

(Total for Question 17 is 3 marks)

Pearson Edexcel - Monday 14 November 2011 - Paper 4 (Calculator) Higher Tier

20.

2. Ishmal invested £3500 for 3 years at 2.5% per annum **simple interest**.

Work out the total amount of interest Ishmal earned.

£

(Total 3 marks)

Pearson Edexcel - Monday 7 June 2010 - Paper 3 (Non-Calculator) Higher Tier

21.

19. Arwen buys a car for £4000
The value of the car depreciates by 10% each year.
Work out the value of the car after two years.

£

(Total 3 marks)

OCR GSCE – Monday 11 November 2019 – Paper 6 (Calculator) Higher Tier

22.

- 5 Kay invests £1500 in an account paying 3% **compound** interest per year.
Neil invests £1500 in an account paying $r\%$ **simple** interest per year.

At the end of the 5th year, Kay and Neil's accounts both contain the same amount of money.

Calculate r .

Give your answer correct to 1 decimal place.

$r = \dots\dots\dots$ [6]

OCR GSCE – Tuesday 21 May 2019 – Paper 4 (Calculator) Higher Tier

23.

10 Claudia invests £25 000 at a rate of 2% per year compound interest.

Calculate the total amount of **interest** she will have earned after 5 years.
Give your answer correct to the nearest penny.

£ [4]

OCR GSCE – Tuesday 6 November 2018 – Paper 4 (Calculator) Higher Tier

24.

4 Here are the interest rates for two bank accounts.

Northern Savings Bank (NSB)
2.5% per year compound interest

Central Alliance Bank (CAB)
2.7% per year simple interest

Mia puts £6400 in each account.

Calculate the difference in value between the two accounts after 8 years.
Give your answer correct to the nearest penny.

£ [6]

OCR GSCE – Tuesday 12 June 2018 – Paper 6 (Calculator) Higher Tier

25.

- 15 Ratna invests £1200 for 2 years in a bank account paying $r\%$ per year compound interest. At the end of 2 years, the amount in the bank account is £1379.02.

Calculate r .

$r = \dots\dots\dots$ [4]

OCR GSCE – Wednesday 8 November 2017 – Paper 6 (Calculator) Higher Tier

26.

- 7 Gustavo invests £520 for 6 years in a bank account paying simple interest. At the end of 6 years, the amount in the bank account is £629.20.

Calculate the annual rate of interest.

..... % [4]

OCR GSCE – Thursday 8 June 2017 – Paper 5 (Non - Calculator) Higher Tier

27.

- 4 Rashid invests money into an account which pays a fixed rate of compound interest each year. The value, £ V , of his investment after t years is given by the formula

$$V = 1250 \times 1.03^t.$$

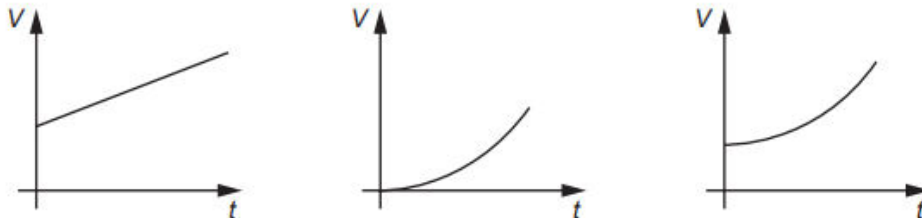
- (a) How much money did Rashid invest?

(a) £ [1]

- (b) What rate of compound interest is paid each year?

(b) % [1]

- (c) Circle the graph that best represents the growth in Rashid's account.



[1]

OCR GSCE – Sample Papers – Paper 6 (Calculator) Higher Tier

28.

4 Here are the interest rates for two accounts.

Account A
Interest: 3% per year compound interest.
No withdrawals until the end of three years.

Account B
Interest: 4% for the first year, 3% for the second year and 2% for the third year.
Withdrawals allowed at any time.

Derrick has £10 000 he wants to invest.

- (a) Calculate which account would give him most money if he invests his money for 3 years.
Give the difference in the interest to the nearest penny.

(a) Account by p [5]

- (b) Explain why he might **not** want to use Account A.

.....
..... [1]

AQA GCSE – Tuesday 11 June 2019 – Paper 3 (Calculator) Higher Tier

29.

- 10 Mia wants to borrow £6000 and repay it, with interest, after two years.
She sees two offers for loans.

Offer 1
Compound interest
3% per year

Offer 2
Compound interest
First year 1%
Second year 5%

Mia says,

"I will pay back the same amount because the average of 1% and 5% is 3%"

Is she correct?

You **must** show your working.

[3 marks]

30.

7

Investment A Save £150 per month for 2 years.
 2.5% interest is added to the total amount saved.

Investment B Invest £3500
 Compound interest is added at 3% per year.

After 2 years, how much **more** is investment B worth than investment A?

[4 marks]

Answer £ _____

