



THIRD SPACE
LEARNING

GCSE Exam Questions

Simple and Compound Interest
| Number

GCSE Exam Questions: Simple and Compound Interest

- 1) (a) £1400 is invested for 3 years.

Interest Rate A: 2.4% compound interest per annum

Interest Rate B: 0.2% simple interest per month

Which interest rate would return the greatest amount of interest?

(4)

- (b) After 5 years with interest rate B, the interest accumulated was £360.

What was the initial amount invested?

(2)

(6 marks)

GCSE Exam Questions: Simple and Compound Interest

- 2) (a) The value of an investment reaches £17000. A change in the stock market causes the investment to reduce with a simple interest rate of 3% per hour.

What is the value of the investment after 3 hours?

(2)

- (b) The stock market becomes stable and the investment now increases by a compound interest rate of 0.6% per annum. Assuming this rate continues, what would the value of the investment be after a further 8 years?

(2)
(4 marks)

- 3) Two different furniture stores have an offer.

Eat-sy
Save £45

Dine Deluxe
Save 15%

- (a) If you could buy the same dining table from each store, what value would the item need to be to save the same amount of money?

(2)

GCSE Exam Questions: Simple and Compound Interest

- b)** A set of 4 dining chairs in Dine Deluxe are bought using a credit card. The original price was £220. The credit card applies a 1.2% interest charge per year. If the item was fully paid for after 1 year, how much money would be saved, compared to the original amount?

(3)

(5 marks)

-
- 4) (a)** The population of bacteria in a petri dish surpasses 2 million. If the population of bacteria expands at a compound rate of 1.7% per minute. How many bacteria are expected in the petri dish after 5 minutes?

(2)

- (b)** How long will it take for the population to exceed 2500000?

(2)

(4 marks)

GCSE Exam Questions: Simple and Compound Interest Answers

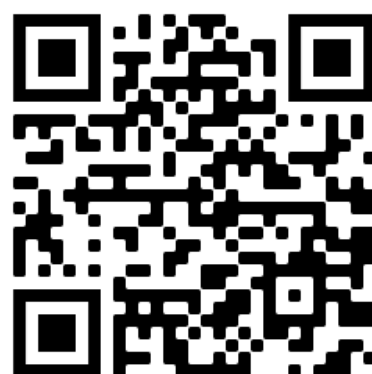
	Question	Answer	Marks
1) (a)	£1400 is invested for 3 years. Which interest rate would return the greatest amount of interest? Interest Rate A: 2.4% compound interest per annum Interest Rate B: 0.2% simple interest per month	Interest Rate A: 1400×1.024^3	(1)
		£1503.24	(1)
		Interest Rate B: $1400 \times (1 + (\frac{0.2 \times 3 \times 12}{100}))$	(1)
		£1500.80	(1)
(b)	After 5 years with interest rate B, the interest accumulated was £360. What was the initial amount invested?	$360 / (0.002 \times 5 \times 12)$	(1)
		£3000	(1)
2) (a)	The value of an investment reaches £17000. A change in the stock market causes the investment to reduce with a simple interest rate of 3% per hour. What is the value of the investment after 3 hours?	$£17000 \times (1 - \times 0.033)$	(1)
		£15470	(1)
(b)	The stock market becomes stable and the investment now increases by a compound interest rate of 0.6%. Assuming this rate continues, what would the value of the investment be after a further 8 years?	15470×1.006^8	(1)
		£16228.34	(1)
3) (a)	Two different furniture stores have an offer. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid orange; padding: 5px; text-align: center;"> Eat-sy Save £45 </div> <div style="border: 1px solid orange; padding: 5px; text-align: center;"> Dine Deluxe Save 15% </div> </div> If you could buy the same dining table from each store, what value would the item need to be to save the same amount of money?	$£45 = 15\%$ $£3 = 1\%$ $£300 = 100\%$ or £300	(1)
			(1)
(b)	A set of 4 dining chairs in Dine Deluxe is bought using a credit card. The original price was £220. The credit card applies a 1.2% interest charge per year. If the item was fully paid for after 1 year, how much money would be saved, compared to the original amount?	$220 \times 0.85 = £187$	(1)
		$187 \times 1.012 = £189.24$	(1)
		$220 - 189.24 = £30.76$ saved	(1)
4) (a)	The population of bacteria in a petri dish surpasses 2 million. If the population of bacteria expands at a compound rate of 1.7% per minute. How many bacteria are expected in the petri dish after 5 minutes?	2000000×1.017^5	(1)
		2175879	(1)
(b)	How long will it take for the population to exceed 2500000?	At least 2 attempts of 2000000×1.017^n seen	(1)
		$n = 14$ minutes	(1)

Where to go next?

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