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)

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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	Dine Deluxe
Save £45	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)

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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)

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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 £1503.24 Interest Rate B: $1400 \times (1 + (\frac{0.2 \times 3 \times 12}{100}))$ £1500.80	**(1)** **(1)** **(1)** **(1)**
(b)	After 5 years with interest rate B, the interest accumulated was £360. What was the initial amount invested?	$360 / (0.002 \times 5 \times 12)$ £3000	**(1)** **(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?	$£17000 \times (1 - \times 0.033)$ £15470	**(1)** **(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 £16228.34	**(1)** **(1)**
3) (a)	Two different furniture stores have an offer. Eat-sy Save £45 Dine Deluxe Save 15% 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?	220×0.85 = £187 187×1.012 = £189.24 220 - 189.24 = £30.76 saved	**(1)** **(1)** **(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 2175879	**(1)** **(1)**
(b)	How long will it take for the population to exceed 2500000?	At least 2 attempts of 2000000×1.017^n seen n = 14 minutes	**(1)** **(1)**

Where to go next?

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