Simple and Compound Interest Exam Practice

Simple Interest

Q1. Tom invests £300 in a bank which offers 5% simple interest.
Work out how much money he will have after 2 years.

(2 marks)

Q2. Sally invests £8000 in a bank which offers 3.5% simple interest.
Work out how much money she will have after 4 years.

(2 marks)

Q3. Peter invests £12,500 in a bank which offers 2% simple interest.
How much interest will he have earned after 3 years?

(2 marks)

Compound Interest

Q4. Pat invests £250 in a bank which offers 1% compound interest.
Work out how much money she will have after 2 years.

(3 marks)

Q5. Ray invests £90,000 in a bank which offers 4.7% compound interest.
Work out how much interest he will have earned after 3 years.

(3 marks)

Q6. Determine how much money Yasmin will have if she invests £5000
in a bank which offers 3% compound interest after 4 years.

(3 marks)

Problem Questions:

Q7. Mary is saving for a trip around the world. Her target is £25,000.
At the start of the year, she has £20,000 in her bank account which
offers 4% compound interest. Assuming that she goes on the trip
at the end of the year in which she reaches her target, how many years
will it be before she goes?

(4 marks)

Q8. A tree is 3.5 metres tall. It grows by 8% each year. Work out the
complete number of years which pass before the tree doubles in height.

(3 marks)

Q9. Harry sees the following adverts in the high street:

MegaSave Bank:	**GoldRush Bank:**
2% simple interest	1.75% compound interest
£50 welcome bonus	

He decides to invest £4000 just for 2 years, and then withdraw his money. Which bank should he invest his money in?
You must show all your working.

(4 marks)

Q10. At the end of 3 years, Paula had £420 in her account. If the bank had offered 4% simple interest during this period, work out the amount of money Paula originally invested.

(3 marks)

Q11. A luxury car is worth £55,000 at the start of 2020. Each year it depreciates by 6%. At the start of which year will it have lost a quarter of its original value?

(4 marks)

Q12. Maria invests £4000 in a savings account for 4 years. The account pays compound interest at an annual rate of 1.8% for the first year and then x% for the next 3 years. There is a total amount of £4333.96 in the savings account at the end of the 4 years.
Work out the value of x, giving your answer to 1 decimal place.

(4 marks)

Q13. The population P, of a colony of frogs, is modelled by the formula:

$P = 160 \times 1.04^t$ where t is the number of months since records began.

 (i) How many frogs were there when the records first began?

(1 mark)

(ii) Work out the number of frogs in the population after one year.

(2 marks)

(iii) After 30 months, the population of frogs will be k times the population after 10 months. Find k to the nearest whole number.

(3 marks)

Q14. Helen earns a pay rise of 5% in 2020 and another of 2% in 2021. She claims her pay has increased by 7% over the two years. Do you agree? Explain your reasoning.

(2 marks)