Question 1: Paul leaves £4000 in the bank for two years. It earns compound interest of 5% per year. Calculate the total amount Paul has in the bank at the end of the two years.

Question 2: The population of birds on an island is estimated to increase by 10% every year. The population of birds on the island is 20000. Calculate an estimate for the population of birds in three years time.

Question 3: The value of a car decreases by 5% each year. Sophie bought a car two years ago for £10000. Work out the value now.

Question 4: Sam invests £1800 in the bank for four years. It earns compound interest of 4% each year. Calculate the total amount Sam has in the bank at the end of four years.

Question 5: A full water tank holds 500 litres. The tank begins to leak water and is losing 14% of its contents every hour. Find how much water is left in the tank after 8 hours.

Question 6: The height of a tree increases by 60% each year. When planted the tree was 40 cm tall. How tall will the tree be in 5 years time.

Question 7: Carrie invests £800 for 4 years at 3% interest per year. How much interest does she earn?

Question 8: A house was bought for £100,000. Its value appreciates by 7.5% each year for the first three years. What was its value at the end of the three years?
Question 9: The number of people living on a remote island decreases by 9% every 10 years.
In 1950 there were 18000 living on the island.
Calculate how many less people will be living on the island in 2020.

Question 10: A car was bought for £20,000.
Its value depreciates by 31% each year for the first four years.
What is its value at the end of the four years?

Question 11: A tree is 80cm when planted.
Each year the height of the tree increases by 22%.
After how many complete years will the height of the tree be at least 3m?

Question 12: The number of polar bears in a region is decreasing by 5% per year.
There are 3000 polar bears in the region in 2017.
What year will be the first year with less than 1000 polar bears in the region?

Question 13: Michael has started working for a company on a salary of £15000.
Each year he will be given a 6% pay rise.
How many years will it take for Michael’s salary to exceed £30000?

Question 14: The value of a car decreases by 7.2% each year.
When bought the car cost £6200.
How many years will it take the car to have a value less than £1000?

Question 15: A full water tank has sprung a leak.
4% of the water is lost every minute.
What percentage of water is left in the tank after twenty minutes?

Question 16: A fish tank, that is full of water, has sprung a leak.
12% of the water is lost every hour.
What percentage of the water is lost after three hours?

Question 1: Florence invests £200 for two years at 5% compound interest, paid yearly.
Liam says that the interest that Florence will receive will be £20.
Is Liam right?
Question 2: The value of a motorcycle was £14000 on 1st April 2014. Every three months the value of the motorcycle decreases by 2% of its value at the start of that three months. What was the value of the motorcycle on 1st April 2016?

Question 3: When a ball is dropped, it bounces and then rises. The ball rises to 90% of the height from which it is dropped. The ball is dropped from a height of 4m.

(a) Calculate the height of the rise after the first bounce.
(b) Calculate the height of the rise after the second bounce.

The ball carries on bouncing, each time rising to 90% of the last rise.
(c) For how many bounces does it rise to height greater than 1m?

Question 4: The population of a country is increasing by 5% a year. How many years will it take the population of the country to double?

Question 5: Raheem and Ben invest money in 2010.

Raheem invests £1000 at Banks’R’us, who pay 3% interest per year. Ben invests £1400 at Bank World, who pay 1% interest per year

In which year will Raheem’s investment be worth more than Ben’s?

Question 6: The population of a country increases by x% each year. In 2014 the population of the country was 24,000,000. Three years later, the population was 26,996,736. Find x.

Question 7: Charlotte invests £5000. The bank pays 10% interest for the first year and then y% every year after that. After three years, Charlotte has £5610.55 Calculate y.