

## Compound Decay

Give your answers to a sensible degree of accuracy.

1. A car was bought for £12 000. Its value has depreciated by 15% each year.  
How much was it worth after:  
a. 2 years                                      b. 5 years                                      c. 10 years?
  
2. Sheila is on a diet and has been losing 3% of her weight each month. She weighed 180 kg at the beginning of her diet.  
How much did she weigh after:  
a. 2 months                                      b. 7 months                                      c. 1 year?
  
3. There are 750 bacteria in a petri dish. An antibiotic is applied and the population of bacteria starts to decrease by 1% every hour.  
If the decrease continues at this rate, how many bacteria will there be after:  
a. 5 hours                                      b. 1 day                                      c. 2 days?
  
4. In 2008, a football team had an average attendance of 35 000. Since then, the average attendance has been dropping by 8% every year.  
What was the average attendance in:  
a. 2010                                      b. 2015                                      c. 2017
  
5. A new car cost £23 000. Its value has depreciated by 12.5% per year.  
How much was it worth after:  
a. 3 years                                      b. 6 years                                      c. 9 years?
  
6. A bee colony population is decreasing at a rate of 7% per year.  
If there are currently 34 000 bees in the colony, how many years will it take the population to drop below:  
a. 30 000                                      b. 25 000                                      c. 10 000?