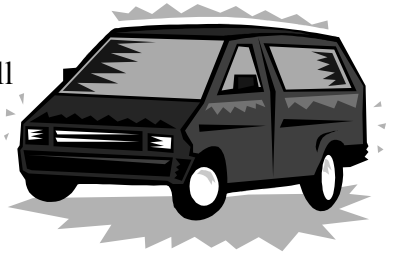


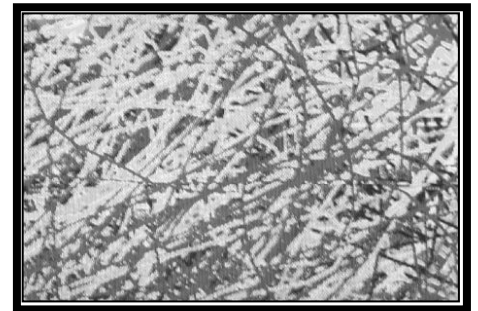
## Appreciation / Depreciation

1. Calculate the compound interest on
  - (a) a sum of £1500 at a rate of 7% p.a. for 4 years.
  - (b) a sum of £15 000 at a rate of 5.5% p.a. for 5 years.
  - (c) a sum of £120 000 at a rate of 11.2% p.a. for 10 years.
2. A plot of land is valued at £30 000. The value of the land is expected to increase at a rate of 14% p.a. for the next 3 years.  
Find the value of the land in 3 years time.
3. A people carrier cost £11 000 new in 2005. The value of the car will depreciate at a rate of 15% per annum for each of the next 4 years.  
Find the value of the car in 4 years time.  
**Give your answer correct to 2 significant figures.**



4. On retiring from work Mr. Smith received a lump sum of £52 500. He decided to invest his lump sum in a Premium account earning 9.5% interest per annum.  
How much interest would Mr. Smith get after 5 years.

5. A painting valued at £70 000 in 2001 has appreciated at a steady rate of 12% per annum for each of the last 6 years.  
What was the value of the painting in 2007?



6. The number of bacteria in a jar is 36 000. Every 15 minutes the number of bacteria in the jar will increase by 70%.  
Calculate the number of bacteria in the jar after one hour.  
**Give your answer correct to 3 significant figures.**

7. A van rental company purchases vans costing £22 000 each. The value of a van depreciates by 30% in its first year and then by 15% in each successive year.  
A van is replaced at the end of the year in which its value falls below half its original price.  
After how many years will the company replace a van?



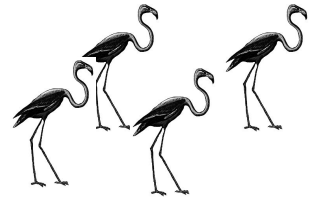
8. At 1.00 p.m., a pan containing 1.3 litres of water, is left on the window sill of a house.  
The water in the pan evaporates at a rate of 11% per hour.  
How much water remained in the pan at 5 p.m.?



9. A geologist measures stalactites in a cave. The longest measured is 235 centimetres long.  
If the stalactite grows at a rate of 4.5% every 10 years,  
How long will it be in 50 years time?

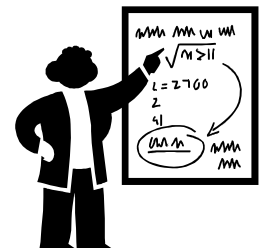


10. The number of flamingos in one lake in Africa is estimated at 45 000.  
Due to changes in habitat the number of flamingos is falling at a rate of 8% per annum.  
Calculate the number of flamingos there will be in 6 years time.  
**Give your answer correct to 2 significant figures.**



11. The population of the country Liberia was 3.75 million in the year 2007.  
If the population is growing at a steady rate of 4.5% per annum, what would the population be in 2015?

12. Amanda is a secondary school teacher. She earns £32 500 per annum.  
Her union agree a 3-year pay deal which will see her get an annual rise of 2.6%.  
How much will Amanda earn in 3 years time?



13. In 2004 a house was valued at £85 000 and its contents were valued at £32 000.

The value of the house appreciates at a rate of 12% each year.  
The value of the contents depreciates at a rate of 4% each year.

What will be the **total** value of the house and its contents in the year 2010?



14. A water tank contains 650 litres of water. A hole in the tank means that water is leaking from the tank at a rate of 3.65% every 10 minutes..  
How much water will be left in the tank after an hour?