Higher Biology - Basic Problem Solving Practice

1. The population of mice in an area of woodland is 1 million. The increase in the population is 1% per annum. What will the population be after 2 years?

2. A cell appears to be 1cm long when viewed under a microscope. The microscope has a magnification of x200. What is the size of the cell in micrometers? (1mm = 1000micrometres)

3. 250 seedlings were planted but only 150 of them successfully germinated. What is the percentage germination?

4. 150 seeds were planted. 10% of these successfully germinated. How many is this?

5. If a DNA molecule contains 2000 bases and 400 of these are Cytosine, what percentage is made up of adenine molecules?

6. The mass of a tree decreased from 16kg in May to 12kg in November. What was the percentage decrease?

7. The length of muscle tissue changed from 32mm to 26mm. What is the percentage change?

8. In a genetic cross, 215 flowers were produced. 68 of these were purple, 35 yellow and 17 white. Express this to the nearest whole number ratio.

_____purple:_____white:_____yellow

9. When investigating osmosis in potatoes, why is it important to do the following?
i) wait for a suitable length of time before re-weighing potatoes?

ii) blot the potatoes dry before re-weighing?

10. When doing an experiment, why is it important to repeat it?