

## National 5 Rigour Practice

### Repeat Percentages – Appreciation and Depreciation

1. Antarctica contains an estimate  $3 \times 10^7$  cubic km of ice.  
Due to climate change, scientists predict this will reduce by 8.7% per year for the next 10 years.  
Calculate the volume of ice remaining after this time. Give your answer to 3 significant figures in scientific notation.
2. A liquid is boiled to a temperature of  $235^{\circ}\text{C}$ . If it cools at a rate of 13% per hour, work out its temperature after 5 hours?
3. Victoria invests £5400 in a savings account, earning 4.3% interest per year.  
Calculate the value of her investment after 4 years.
4. A tank was filled with 50 litres of water at 4 00pm. After a leak developed, it lost 6% of its volume every hour.  
Determine if the tank was at least half full at 7 00pm.
5. Energy prices are expected to rise by 7% per year over the next 5 years.  
Work out the new annual price of an energy bill currently costing £975 per year.
6. Mr Green's tree is 4.4 metres tall and grows at a rate of 3.5% per month.  
He decided to trim the tree when it reaches a height of 5 metres.  
Will he need to trim the tree after 4 months? Show your working.
7. A school roll is expected to increase by 3% per year for the next 4 years. If the roll is currently 924, calculate the expected roll of the school in 4 years.
8. House prices are expected to fall by an average of 7% per year for the next 5 years.  
A house is currently valued at £140 500. Work out its expected value after 5 years. Give your answer correct to 3 significant figures.

Past Paper Questions			
Year	Paper	Question	Marks
2014	2	1	3
2015	2	1	3
2016	2	1	3
2017	2	2	3
2018	2	1	3
2019	2	1	3