Review for Test 1

1. A bottle of soda pop at room temperature ($72°F$) is placed in a refrigirator where the temperature is $44°F$. After half an hour the soda pop has cooled to $61°F$. What is the temperature of the soda pop after another half an hour? How long does it take for the soda pop to cool to $50°F$?

2. We have a 100mg sample of cesium-137. It takes 30 years for half of the sample to decay. How much of the sample remains after 100 years?

3. How long will it take an investment to double in value if the interest rate is 6% compounded continuously?

4. A bacteria culture grows at a rate proportional to its size. After 2 hours there are 600 bacteria and after 8 hours the count is $75,000$. When will the population reach $200,000$?