

1. The half-life of cesium-137 is 30 years. Suppose we have a 100-mg sample.
 - (a) Find the mass that remains after t years.
 - (b) How much of the sample remains after 100 years?
 - (c) After how long will only 1 mg remain?
2. A freshly brewed cup of coffee has temperature 95°C in a 20°C room. When its temperature is 70°C , it is cooling at a rate of 1°C per minute. When does this occur?
3. A curve passes through the point $(0, 5)$ and has the property that the slope of the curve at every point P is twice the y -coordinate of P . What is the equation of the curve?
4. How long will it take an investment to double in value if the interest rate is 6% compounded continuously? What is the equivalent annual interest rate?