Logarithms & Exponential Equations

1. Solve the following for *x*, giving your answers correct to 3 significant figures.

a.  b.  c.  d.  e. 

f.  g. 

2. A wildlife biologist determines that an endangered species will become extinct in a given geographic region if its population falls below 120 individual animals. The population can be modeled by the equation , where *t* is the number of years after the initial count. If this trend continues, when will the species become extinct in the region?

3. A man jumps from an airplane. His speed of descent *t* seconds after he jumps is given by the equation  m s-1. Determine how long will it take for his speed to reach 40 m s-1.

4. The mass of a radioactive substance is decreasing according to the function 

after *t* weeks. Find the time it will take for the substance to reach 0.1% of its original mass.

5. Solve for *x.*

a.  b. 