

The number of alcohol-related accidents in a certain state t months after the passage of strict anti drunk driving laws has been decreasing at a rate of $20 + te^{0.1t}$ accidents per month. There were 886 alcohol-related accidents the year before the enactment of the laws. Determine how many alcohol-related accidents were expected to occur during the first year after the laws were enacted.

Newton's Law of Cooling – The rate of change in the temperature of an object is proportional to the difference between the temperature of the object and the temperature of the surrounding medium.

A hot cup of liquid is placed in a freezer that is at a temperature of 20°F . The temperature of the liquid is initially 170°F . After 10 minutes the temperature of the liquid is 60°F . How much longer will it take for the liquid's temperature to decrease to 30°F .