A radioactive substance decays at a rate that is proportional to the amount of the substance present.

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.

A corporation manufactures a smartphone. If y is the number of phones sold monthly in after t months, find the sales for the twelfth month. They predict the rate of growth of sales will be six times the one-half power of the sales and currently 40000 phones are sold monthly.