

A 500-gallon tank initially contains 200 gallons of pure distilled water. Brine containing 3 pounds of salt per gallon flows into the tank at the rate of 4 gallons per minute, and the well stirred mixture flows out of the tank at the rate of 4 gallons per minute. Find the amount of salt in the tank after 10 minutes.

During chemical reaction one substance changes into a second substance at a rate proportional to the unchanged amount of the substance. There are 344 ounces of the original substance initially, and 301 ounces of the original substance after one hour. When will 75 percent of the original substance be changed into the second substance?