EMT 111/112 Assignment 3

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1. A student is trying to determine the half-life of radioactive iodine-131. He measures the amount of iodine-131 in a sample solution every 8 hours. His data are shown in the table below.

Time(h)	Amount(g)
0	4.80
8	4.66
16	4.51
24	4.39
32	4.29
40	4.14
48	4.04

   (a) Make a scatter plot of the data.

   (b) Find an exponential model for the data.

   (c) Use your model to find the half-life of iodine-131.

2. A culture contains 1500 bacteria initially and doubles every 30 min.

   (a) Find a formula for the number of bacteria $n(t)$ after t mins.

   (b) Find the number of bacteria after 2 hours.

   (c) After how many minutes will the culture contain 4000 bacteria?