

Problem 4.33 Use linear regression and logarithmic transformation to determine the coefficients of the following model fitted to the survivor function of Problem 4.25:

$$R(t) = \exp[-H(t)]$$

$$H(t) = a_0 + a_1 t + a_2 t^2$$

Problem 4.25 Use Equation 4.70, calculate the survivor function for the data provided in Problem 4.22 for a sample of size 10 as follows:

Time Order Number	Time to Failure (Years)	Provide Survivor Function Value
0	0	
1	14	
2	18	
3	37	
4	46	
5	55	
6	56	
7	56	
8	56	
9	56	
10	56	

$$S_n(t) = \begin{cases} 1 & 0 \leq t < t_1 \\ \frac{n-i}{n} & t_i \leq t < t_{i+1} \text{ and } i = 1, 2, \dots, n-1 \\ 0 & t_n \leq t < \infty \end{cases} \quad (4.70)$$

Problem 4.22 The following array provides an example of a sample of 10 data points that failed at different years. Classify the values as either TTF or TTC. What is the type of data in this array?

	Time order number	Time (years)	TTF or TTC?
	1	2	
	3	4	
	5	6	
	7	8	
	9	10	
	14	18	
	37	46	
	55	56	
	56	56	
	56	56	
	56	56	
	56	56	