HW 1

Advance Business Analytics

Due 01/29/2024 at 11:59PM.

[30 points]

1. Explain in your own words – what does hazard rate mean? [2]

   Suppose the hazard rate function for the "Telang timing process" is given by - $h(t) = (60-15t + t^2)/500$. For this timing process:

   a. Plot the hazard rate. [2]
   b. Derive and plot the survival function - S(t). [4]
   c. Derive and plot the probability distribution function, i.e., f(t). [4]

   (For the plots, use t=1, 2, 3, …, 39, 40.)

2. Briefly explain the relationship between hazard function and distribution function? [5]

3. If you have 1200 units and you observe their failure as shown below? Calculate hazard rate and provide details of your calculation. [13]

time	failures
0	0
1	95
2	134
3	203
4	250
5	135
6	85
7	70
8	40