

Question #158**Key: B**

The cumulative hazard function for the exponential distribution is $H(x) = x/\theta$. The maximum likelihood estimate of θ is the sample mean, which equals $(1227/15) = 81.8$.

Therefore $\hat{H}_2(75) = (75/81.8) = 0.917$.

To calculate $\hat{H}_1(75)$ use the following table.

j	1	2	3	4	5	6
y_j	11	22	36	51	69	92
s_j	1	3	1	1	3	2
r_j	15	14	11	10	9	6

Therefore,

$$\hat{H}_1(75) = \frac{1}{15} + \frac{3}{14} + \frac{1}{11} + \frac{1}{10} + \frac{3}{9} = 0.805.$$

Thus, $\hat{H}_2(75) - \hat{H}_1(75) = 0.917 - 0.805 = 0.112$.