21. We first find the Product-Limit estimate of the survival distribution.
$S_{10}(t) = 1$ for $0 \leq t < 1$
$S_{10}(t) = 1 - \frac{2}{10} = .8$ for $1 \leq t < 3$
$S_{10}(t) = (.8)(1 - \frac{2}{8}) = .6$ for $3 \leq t < 8$ (the censoring at 3 occurs after the death, the convention is that when there are ties for deaths and censorings, the censoring is associated with the following time interval)
$S_{10}(t) = (.6)(1 - \frac{2}{4}) = .3$ for $8 \leq t < 10$, and $S_{10}(t) = 0$ for $t \geq 10$.
The estimated expected time until death is $\widehat{\mu} = \int_0^{t_{max}} S_{10}(t)\,dt = \int_0^{10} S_{10}(t)\,dt$.
Since $S_{10}(t)$ is a step function, this integral is $1(1) + (.8)(2) + (.6)(5) + (.3)(2) = 6.2$.
Answer: B

22.. The upper limit of the 95% linear confidence interval for $S(t_0)$ is
$S_n(t_0) + 1.96 \cdot \sqrt{\widehat{V}[S_n(t_0)]}$. From Problem 35, we have $S_n(4) = .6$.
Using Greenwood's approximation for the variance of $\widehat{S}(t)$, we have
$\widehat{V}[S_n(4)] = [S_n(4)]^2 \sum_{t_i \leq 4} \frac{s_i}{r_i(r_i - s_i)} = (.6)^2 [\frac{2}{(10)(8)} + \frac{2}{(8)(6)}] = .024$.
The upper limit of the interval is $.6 + (.196)\sqrt{.024} = .904$. Answer: E