

HW 8.3 Part A pages 518-519 problems 57, 59, 65,

(57) a) 95% and $n=10$
 $df=9$ $t^* = 2.262$

b) 99% and $n=20$
 $df=19$ $t^* = 2.861$

(59) $\bar{x} = 114.9$ $s_x = 9.3$ $n = 27$

$$SE = \frac{s_x}{\sqrt{n}} = \frac{9.3}{\sqrt{27}} = 1.7898$$

In repeated sampling, the average distance between the sample means and the population mean will be about 1.7898 units.

(65) 99% $n=58$
 $df=57$ $t^* = \underline{\underline{2.678}}$ (from table, had to use df of 50 since df of 57 not on table)

Using technology $\text{Inv } T \left(\frac{1-.99}{2}, 57 \right) = \text{Inv } T (.005, 57)$
 $t^* = \underline{\underline{2.665}}$

If we are able to use the exact degrees of freedom, we will have a slightly shorter interval with the same level of confidence.