

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS AND STATISTICS
Term 141

STAT 319 Statistics for Engineers and Scientists

Quiz #3

Sunday December 7, 2014

Name: _____

ID# _____

- 1) A computer engineer wishes to find the difference between the mean time between failures (MTBF) for processors obtained from two different manufactures. The following data were obtained from independent testing:

$$\begin{aligned} & \text{Manufacturer 1} \\ & n_1 = 75 \\ \bar{X}_1 &= 1200 \text{ hours} \\ s_1 &= 150 \text{ hours} \end{aligned}$$

$$\begin{aligned} & \text{Manufacturer 2} \\ & n_2 = 225 \\ \bar{X}_2 &= 1300 \text{ hours} \\ s_2 &= 210 \text{ hours} \end{aligned}$$

- a) Construct a 99% confidence interval for the difference between MTBF for the two manufacturers.
- b) Interpret the interval.
- c) What does the interval indicate, about the difference between the two manufacturers?
- d) What assumptions, if any, should the engineer make in order to use the interval constructed above? Explain