Problem 1

What is the upper 3 sigma confidence limit for proportion defective when the average daily production is 250 units with an established fraction defective of .05?
   a. .041
   b. .082
   c. .091
   d. .123

Problem 2

If the probability of a car starting on a cold morning is .6, and we have two such cars, what is the probability of at least one of the cars starting on a cold morning?
   a. .84
   b. .81
   c. .60
   d. .36

Problem 3
A sample of size 16 yields an average of 12 and a standard deviation of 3, estimate the 95% confidence interval for the population mean, m.
   a. 10.4 to 13.6
   b. 10.45 to 13.55
   c. 10.53 to 13.47
   d. 10.77 to 13.23

Problem 4
Given the data following, what is the 90% confidence interval for the variance? [22, 23, 19, 17, 29, 25]
   a. 4.21 to 99.07
   b. 15.32 to 28.66
   c. 8.27 to 79.92
   d. 16.87 to 56.52

Problem 5
A process has a mean of 180 and a standard deviation of 8. What is the probability that a value selected at random will be between 170 and 200?
   a. .9937
   b. .8882
   c. .9937
   d. .8943

Problem 6

An experiment was conducted to compare two different tread designs. The data for tread life is shown below. Which test of hypothesis should be used first to compare the data?

    a. T test for paired comparisons
    b. T test assuming equal variances
    c. T test assuming unequal variances
    d. F test

Design A	Design B
44000	42000
43000	49000
47500	45500
44400	41800
46000	47300
45000	44750

Problem 7

Employee #	Initial Mst	Second Mst
1	78	81
2	73	76
3	66	60
4	45	60
5	89	90
6	59	75
7	78	82
8	87	92
9	69	66
10	91	94
11	55	61
12	77	77

Using the data above, can it be said at the 95% confidence level that the training improved the score?

        a. No, because t test is greater than t table
        b. No, because t test is less than t table
        c. Yes, because t test is greater than t table
        d. Yes, because t test is less than t table

Problem 8\
Given the ANOVA table shown we can conclude at the .01 level
  a. No significant difference between rows
  b. No significant difference between columns
  c. Significant difference between rows
  d. Significant difference between columns

Source of Variation	SS	df	MS	F	P-value	F crit
Rows	12.66667	4	3.166667	2.5	0.12572	7.0060
Columns	26.53333	2	13.26667	10.4736	0.00583	8.6491
Error	10.13333	8	1.266667			
Total	49.33333	14				

Problem 9
The slope regression equation for the following data is

X	Y
4	3
6	7
2	1
8	9
4	3
3	5
8	6
9	9
4	5
10	7
6	7

$\Sigma X = 64$
$\Sigma Y = 62$
$\Sigma X^2 = 442$
$\Sigma XY = 416$

  a. Not linear therefore no slope calculator
  b. 1.02
  c. .794
  d. .625