## BNAD 276. STATISTICAL INFERENCE IN MANAGEMENT

Presession. Summer 2017.
TAKE-HOME QUIZ 1. DUE DATE: 1PM WEDNESDAY 17 MAY 2017
NOTE:

1. There are total 10 questions. Answer all questions. The total points are 10.
2. Submit at the beginning of the lecture ( 1 pm ) on Wednesday 17 May 2017.
3. (1 point) Write down the formula to calculate: (Each formula worths 0.25 point)
a) Sample mean
b) Sample variance
c) Sample covariance
d) Sample correlation

The following data is used for questions 2, 3, 4.
The following national weather report gives the temperatures and weather conditions on the previous day in cities across the nation.

| City | Hi | Low | Condition |
| :--- | :---: | :---: | :--- |
| Albany, N.Y. | 88 | 60 | cloudy |
| Chicago | 92 | 64 | clear |
| Dallas-Ft.Worth | 89 | 72 | cloudy |
| Denver | 75 | 54 | clear |
| Hartford | 88 | 61 | cloudy |
| Honolulu | 86 | 70 | rain |
| Kansas City | 93 | 74 | clear |
| Los Angeles | 80 | 62 | cloudy |
| Nashville | 94 | 72 | clear |
| New York City | 90 | 69 | rain |
| Philadelphia | 90 | 67 | rain |

2. How many variables are there in this data set? What are they? (1 point)
3. Which variable(s) is/are categorical and which is/are quantitative? (1 point)
4. Show the frequency distribution for the variable Condition? (1 point)

The following data set is used for questions 5-10.
The Michael Painting Company has purchased paint from several suppliers. The purchase price per gallon and the number of gallons purchased are shown below.

| Supplier | Price Per Gallon (\$) | Number of Gallons |
| :---: | :---: | :---: |
| A | 21 | 700 |
| B | 25 | 200 |
| C | 30 | 100 |
| D | 27 | 200 |

5. What is the mean of the Price Per Gallon? (1 point)
6. What is the 50 th percentile of Price Per Gallon? (1 point)
7. What is the variance of Price Per Gallon? (1 point)
8. Calculate the sample standard deviation of Price Per Gallon. (1 point)
9. Calculate the sample covariance of Price Per Gallon and Number of Gallons. (1 point)
10. Calculate the sample correlation between Price Per Gallon and Number of Gallons. (1 point)
