

NAME SOLUTIONS

QUIZ 1 – Business Statistics

Friday September 25th 2009

Given the following set of data, find the values listed below.

1.1 -2 3.3 6.1 2 8.1 12 4.7 7.6 12.1 0.5 -3.1

2.2 -3.4 -2.7 5 6 12.2 11.3 10.1 3.2 1.1 -4.2 -3.3

1.2 -3 -5.6 -7.2 8.4 7.2 6.4 3 6 2 2 1.1

Sample mean: 3.0944

SS(X): $\frac{\sum x^2 - (\sum x)^2}{n} = \frac{1317.46 - \frac{(111.4)^2}{36}}{36} = \span style="border: 1px solid black; padding: 2px;">972.74$

Sum of all data: 111.4

Sum of the squares of all the data: 1317.46

Sample variance of the data: 27.793

Sample standard deviation: 5.272

Median: $\frac{2.2 + 3}{2} = \span style="border: 1px solid black; padding: 2px;">2.6$

Mode: No Mode 2 & 1.1 both appear 3 times

25th Percentile (P_{25}): (depth 9.5) $\frac{-2 + 0.5}{2} = \span style="border: 1px solid black; padding: 2px;">-0.75$

SORTED DATA (FOR MEDIAN & P_{25})

-7.2 -5.6 -4.2 -3.4 -3.3 -3.1 -3 -2.7 -2 0.5 1.1 1.1
1.1 1.2 2 2 2 2.2 3 3.2 3.3 4.7 5 6
6 6.1 6.4 7.2 7.6 8.1 8.4 10.1 11.3 12 12.1 12.2

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- 1.1 -2 3.3 **6.2** 2 8.1 12 4.7 7.6 12.1 0.5 -3.1
- 2.2 -3.4 -2.4 5 6 11.2 -11.3 1.1 -3.2 1.1 -4.2 -3.3
- 1.2 -3 -5.6 -7.2 2.4 7.5 6.4 3 4 2 2 1.1

Sample mean: 1.8083

SS(X): $\frac{1112.57 - \frac{(65.1)^2}{36}}{36} =$ 994.85

Sum of all data: 65.1

Sum of the squares of all the data: 1112.57

Sample variance of the data: 28.42

Sample standard deviation: 5.33

Median: $(2+2)/2 =$ 2

Mode: 1.1 (APPEARS 4 TIMES)

25th Percentile (P_{25}): $\frac{(-3) + (-24)}{2} =$ -2.7

SORTED data (FOR median & Percentiles)

-11.3	-7.2	-5.6	-4.2	-3.4	-3.3	-3.2	-3.1	-3	-2.4	-2	0.5
1.1	1.1	1.1	1.2	2	2	2	2.2	2.4	3	3.3	4
4.7	5	6	6.2	6.4	7.5	7.6	8.1		11.2	12	12.1

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1.1 -2 3.3 6.3 6 8.1 12 -4.7 7.6 12.1 0.5 -3.1

2.2 -3.4 -8.4 8 6 11.2 -11.3 1.1 -3.2 0.1 -4.2 -3.3

1.2 -3 -5.6 -7.2 2.4 7.5 6.4 3 4 2.1 2 -1.1

Sample mean: 1.492

SS(X): 1168.73

Sum of all data: 53.7

Sum of the squares of all the data: 1248.83

Sample variance of the data: 33.39

Sample standard deviation: 5.78

Median: $\frac{1.2 + 2}{2} =$ 1.6

Mode: NO MODE

25th Percentile (P_{25}): $-\frac{3.2 - 3.1}{2} =$ -3.15

-11.3 -8.4 -7.2 -5.6 -4.7 -4.2 -3.4 -3.3 -3.2 -3.1 -3 -2
-1.1 0.1 0.5 1.1 1.1 1.2 2 2.1 2.2 2.4 3 3.3
4 6 6 6.3 6.4 7.5 7.6 8 8.1 11.2 12 12.1

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Given the following set of data, find the values listed below.

1.1 -2 3.3 6.4 6 8.1 12 -4.7 7.6 12.2 0.5 -3.1

2.2 -3.4 -8.4 8 6 5.2 -11 -1.1 -3.2 0.1 -4.2 -3.3

1.2 -3 -5.6 -7.2 2.4 4.5 6.4 3 4 2.1 2 -1.1

Sample mean: 1.194

SS(X): 1060.08 $1060.08 = 1111.44 - \frac{43^2}{36}$

Sum of all data: 43

Sum of the squares of all the data: 1111.44

Sample variance of the data: 30.29

Sample standard deviation: 5.503

Median: $\frac{1.2+2}{2} =$ 1.6

Mode: no mode

25th Percentile (P_{25}): $\frac{(-3.3)+(-3.2)}{2} =$ -3.25

SORTED DATA (median & percentile)

-11	-8.4	-7.2	-5.6	-4.7	-4.2	-3.4	-3.3	-3.2	-3.1	-3	-2
-1.1	-1.1	0.1	0.5	1.1	1.2	2	2.1	2.2	2.4	3	3.3
4	4.5	5.2	6	6	6.4	6.4	7.6	8	8.1	12	12.2

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Given the following set of data, find the values listed below.

1.1 -2 3.3 6.5 6 8.1 12 -4.7 7.6 12.2 0.5 -3.1

2.2 -3.4 -8.4 8 6 4.2 -11 -1.1 -3.2 5.1 4.2 -3.3

1.2 -3 -5.6 -7.2 3.4 3.5 6.4 3 2 2.1 -2 -1.1

Sample mean: 1.375

SS(X): 1047.07 $\left(1115.13 - \frac{(49.5)^2}{36} \right)$

Sum of all data: 49.5

Sum of the squares of all the data: 1115.13

Sample variance of the data: 29.92

Sample standard deviation: 5.470

Median: $\frac{2+2.1}{2} =$ 2.05

Mode: No Mode

25th Percentile (P_{25}): $\frac{-3.1-3}{2} =$ -3.05

-11 -8.4 -7.2 -5.6 -4.7 -3.4 -3.3 -3.2 -3.1 -3 -2 -2
-1.1 -1.1 0.5 1.1 1.2 2 2.1 2.2 3 3.3 3.4 3.5
4.2 4.2 5.1 6 6 6.4 6.5 7.6 8 8.1 12 12.2