

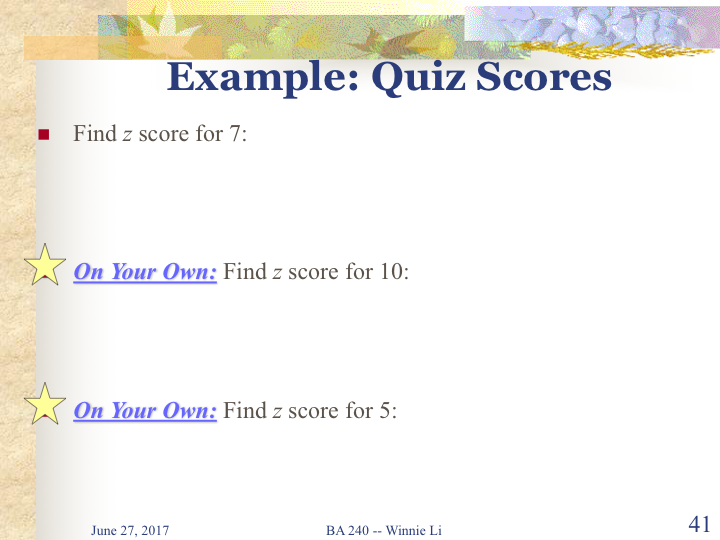
Q1: 7

Q3:9

20th: 6

80th: 9

|  |  |  |
| --- | --- | --- |
|  | Index | Nearest |
| Q1 | 4 |  |
| Q3 | 12 |  |
| Q2 | 8 |  |
| 20th | 3.2 | 3 |
| 80th | 12.8 | 13 |



std dev: 2.323790008

mean: 7.7

Z for 7: (7-7.6)/ 2.323790008 = -0.25819889

Z for 10: (10-7.6)/ 2.323790008 = 1.032795559

Z for 5: (5-7.6)/ 2.323790008 = -1.118861856

#2.36

a.



b.

|  |  |  |
| --- | --- | --- |
| Unit | Leaf Unit = 0.01 | Leaf |
| -6.0 | 5 | 1 |
| -5.5 | 0 | 1 |
| -5.0 | 00 | 2 |
| -4.8 | 5 | 1 |
| -4.6 | 0 | 1 |
| -4.5 | 0 | 1 |
| -4.1 | 05 | 2 |

c.



d.

All graphs provide good information but the histogram is the most informative. We can see that the distribution is left skewed because the mean (-4.861) is less than the median (-4.85).

#2.94

a.

x(bar): 8.24

s2: 3.356666667 = 3.357

s: 1.832120811 = 1.832

b.

x(bar) + s: 8.24 + 1.832 = 10.832

x(bar) - s: 8.24 - 1.832 = 6.408

x(bar) + 2s: 8.24 + 1.832 \* 2 = 11.904

x(bar) - 2s: 8.24 - 1.832 \* 2 = 4.576

x(bar) + 3s: 8.24 + 1.832 \* 3 = 13.736

x(bar) - 3s: 8.24 + 1.832 \* 3 = 2.744

|  |  |
| --- | --- |
| x(bar) - s to x(bar) + s | 18/25 = 72% |
| x(bar) – 2s to x(bar) + 2s | 24/25 = 96% |
| x(bar) - 3s to x(bar) + 3s | 25/25 = 100% |

c.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Imperial | Observation | Chebyshev’s Rule | Observation |
| x(bar) - s to x(bar) + s | 18/25 = 72% | 68.26% | The percentage is higher than expected per the imperial rule. | Very few will fall within one standard deviation | The percentage is significantly higher. Not consistent with Chebyshev’s Rule. |
| x(bar) – 2s to x(bar) + 2s | 24/25 = 96% | 95.44% | The percentage is slightly higher but consistent per the imperial rule. | ¾ will fall within two standard deviation | The percentage is significantly higher. Not consistent with Chebyshev’s Rule. |
| x(bar) - 3s to x(bar) + 3s | 25/25 = 100% | 99.73% | The percentage is expected per the imperial rule. | 8/9 will fall within two standard deviation | The percentage is significantly higher. Not consistent with Chebyshev’s Rule. |
|  |  |  |  |  |  |

d.

Range / 6 = 7 / 6 = 1.667

Range / 4 = 7 / 4 = 1.75

The standard deviation should fall between 1.667 and 1.75. The standard deviation on part a is outside of this range. This result does not favorably compare with the value from part a.

#2.132

a.



b.

Descriptive Statistics: Sample A , Sample B

Statistics

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | N | Mean | SE Mean | StDev | Minimum | Q1 | Median | Q3 | Maximum | IQR |
| Sample A | 21 | 158.00 | 5.92 | 27.11 | 85.00 | 151.00 | 165.00 | 172.00 | 196.00 | 21.00 |
| Sample B | 21 | 173.71 | 3.34 | 15.32 | 140.00 | 168.50 | 171.00 | 184.00 | 206.00 | 15.50 |

Sample A

IQR = Q3 – Q1 = 172 – 151 = 21

Lower = 151 – 1.5 IQR = 151 – 1.5 \* 21 = 119.5

Upper = 172 + 1.5 IQR = 172 + 1.5 \* 21 = 203.5

Outlier: 100, 85

Sample B

IQR = Q3 – Q1 = 184 – 168.5 = 15.5

Lower = 168.5 – 1.5 IQR = 168.5 – 1.5 \* 15.5 = 145.25

Upper = 184 + 1.5 IQR = 184 + 1.5 \* 15.5 = 207.25

Outlier: 140

#2.176

a.

Statistics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Mean | Median | Mode | N for Mode |
| Number of Breeders | 55.7 | 36.0 | 30 | 2 |

b.

The median (36.0) is less than mean (55.7). This is right skewed distribution.

c.

The range between 28-38 appears to have a the most points of number killed. It appears that having a higher number of breeders decreases the probability of birds getting killed.









