I’ve started this assignment but I need help with questions 6,7,8 & 9. Please be thorough in answers. Is question 5 plot correctly?

Thank you.

|  |  |  |
| --- | --- | --- |
| **Date** | **Sweet Crude $** | **Brent Crude $** |
| 17-May-90 | 18.89 | 17.05 |
| 18-May-90 | 18.78 | 17.08 |
| 21-May-90 | 18.26 | 16.65 |
| 22-May-90 | 17.51 | 16.48 |
| 23-May-90 | 16.25 | 15.7 |
| 24-May-90 | 16.02 | 15.8 |
| 25-May-90 | 16.12 | 15.95 |
| 29-May-90 | 18 | 15.48 |
| 30-May-90 | 17.88 | 15.98 |
| 31-May-90 | 17.47 | 15.3 |
| 1-Jun-90 | 17.51 | 15.43 |
| 4-Jun-90 | 17.09 | 15.35 |
| 5-Jun-90 | 16.41 | 14.78 |
| 6-Jun-90 | 16.91 | 14.8 |
| 7-Jun-90 | 16.65 | 15.03 |
| 8-Jun-90 | 16.78 | 14.68 |
| 11-Jun-90 | 16.82 | 14.73 |
| 12-Jun-90 | 17.39 | 14.95 |

1. **Use the per-barrel oil price data provided above to create a line chart using Excel that plots both prices. Be sure that the date is on the X-axis and the price in dollars is on the Y-Axis. (Chapter 2)**



1. **Use the per-barrel oil price data provided above to create a Bar chart using Excel that plots both prices. Be sure that the date is on the X-axis and the price in dollars is on the Y-Axis. (Chapter 2)**



3**Create descriptive statistics including mean, mode, median, range, high, low, variance and standard deviation for the two different oil prices above. Comment on the similarities and differences. (Chapter 3)Sweet Crude**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Date*** | ***Sweet Crude*** | ***Descriptive Statistics for Sweet Crude******Mean:******17.26******Median:******17.24******Mode:******17.51******Range:******2.87******Standard Deviation:******.8617******Sample Variance:******.7425*** | ***Date*** | ***Brent Crude*** | ***Descriptive Statistics for Brent Crude******Mean:******15.62******Median:******14.96******Mode:*** ***0******Range:******2.40******Standard Deviation:******1.036******Sample Variance:******1.074*** |
| **24-May-90** | **16.02** | **8-Jun-90** | **14.68** |
| **25-May-90** | **16.12** | **11-Jun-90** | **14.73** |
| **23-May-90** | **16.25** | **5-Jun-90** | **14.78** |
| **5-Jun-90** | **16.41** | **6-Jun-90** | **14.80** |
| **7-Jun-90** | **16.65** | **12-Jun-90** | **14.95** |
| **8-Jun-90** | **16.78** | **7-Jun-90** | **15.03** |
| **11-Jun-90** | **16.82** | **31-May-90** | **15.30** |
| **6-Jun-90** | **16.91** | **4-Jun-90** | **15.35** |
| **4-Jun-90** | **17.09** | **1-Jun-90** | **15.43** |
| **12-Jun-90** | **17.39** | **29-May-90** | **15.48** |
| **31-May-90** | **17.47** | **23-May-90** | **15.70** |
| **1-Jun-90** | **17.51** | **24-May-90** | **15.80** |
| **22-May-90** | **17.51** | **25-May-90** | **15.95** |
| **30-May-90** | **17.88** | **30-May-90** | **15.98** |
| **29-May-90** | **18** | **22-May-90** | **16.48** |
| **21-May-90** | **18.26** | **21-May-90** | **16.65** |
| **18-May-90** | **18.78** | **17-May-90** | **17.05** |
| **17-May-90** | **18.89** | **18-May-90** | **17.08** |

1. **What is the kurtosis (research kurtosis on your own) and skew of the two oil prices shown above? What does this mean? Explain**
2. **Create a histogram for each of the two oil prices shown. (Chapter 2)**

***Sweet Crude***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **10** |  |  |  |  |  |
|  | **8** |
| **8** |  |
|  | **6** |
| **6** |  |
|  | **4** |
| **4** |  |
|  |
| **2** |
|  | **$15.00** | **$16.00** | **$17.00** | **$18.00** | **$19.00** |

*Brent Crude*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **10** |  |  | **9** |  |  |
| **9** |  |
| **8** |
| **7** |
| **6** | **5** |
| **5** |  |
| **4** |
| **3** | **2** | **2** |
| **2** |  |  |
| **1** |  |
|  | **$13.00** | **$14.00** | **$15.00** | **$16.00** | **$17.00** | **$18.00** |

1. **Does the data seem closer to being normal (empirical rule) or not? Use your answers from problems 1-5 above to explain.**
2. **Your employer, Woodbridge Electric Inc., wants to offer a warranty on the new compact fluorescent light bulb that they have produced and tested. You are called into a meeting and operational experts provide the following data: mean bulb life = 8000 hours, standard deviation = 400 hours (assume a normal distribution). The financial people tell you that the firm cannot afford to replace more than 2.5% of the bulbs under warranty. Some members of the board of directors are pressuring you to come up with a warranty of 7000 hours. The marketing people are pressuring you to create a warranty of 7500 hours. Use the data and adhere to the 2.5% financial constraint above to make your calculations and recommend the highest warranty that you can. What do you recommend as a warranty? (Chapter 7)**
3. **Why did you choose this figure as the warranty? What percentage of bulbs would need to be replaced if you chose a warranty of 7000 or 7500? Justify your answer statistically. How do you explain this to the board of directors, marketing people and financial people? (Chapter 7)**

**9 )The Operational experts of Woodbridge Electric have announced a breakthrough in the production process and the mean of the same bulb has increased to 9000 hours and the standard deviation has decreasing to 200 hours (again assume a normal distribution). Using the same 2.5% constraint how does this affect the warranty? Is this good news or bad for the customers and the firm? (Chapter 7)**