George Smith

HW

**Part 1**

|  |  |
| --- | --- |
| I | xi |
| July | 10.5 |
| Aug | 11.2 |
| Sep | 9.2 |
| Oct | 10.1 |
| Nov | 10.4 |
| Dec | 10.5 |

**Part 2**

|  |  |  |
| --- | --- | --- |
| I | xi | MR |
| July | 10.5 |  |
| Aug | 11.2 | 0.7 |
| Sep | 9.2 | 2 |
| Oct | 10.1 | 0.9 |
| Nov | 10.4 | 0.3 |
| Dec | 10.5 | 0.1 |

**Part 3**

Average Trade Deficit for the last half of 1988 (xbar) = **10.32**

**Part 4**

Average Moving Range(mrbar) = **0.8**

**Part 5**

**Natural Process Limits for x-chart:**

**CL 10.32**

**LCL 8.19**

**UCL 12.44**

**Part 6**

URL 2.616

**Workbook for part questions 1-7**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **Moving Range Chart** | | |  | **Individual Chart** | |  |  |
| I | xi |  | MR | MRbar | UCL | LCL |  | x | xbar | UCL | LCL |
| July | 10.5 |  |  | 0.8 | 2.62 | 0 |  | 10.5 | 10.32 | 12.44 | 8.19 |
| Aug | 11.2 |  | 0.7 | 0.8 | 2.62 | 0 |  | 11.2 | 10.32 | 12.44 | 8.19 |
| Sep | 9.2 |  | 2 | 0.8 | 2.62 | 0 |  | 9.2 | 10.32 | 12.44 | 8.19 |
| Oct | 10.1 |  | 0.9 | 0.8 | 2.62 | 0 |  | 10.1 | 10.32 | 12.44 | 8.19 |
| Nov | 10.4 |  | 0.3 | 0.8 | 2.62 | 0 |  | 10.4 | 10.32 | 12.44 | 8.19 |
| Dec | 10.5 |  | 0.1 | 0.8 | 2.62 | 0 |  | 10.5 | 10.32 | 12.44 | 8.19 |
|  |  | **MRBar** | 0.8 |  |  |  | **xbar** | 10.32 |  |  |  |
|  |  | **UCL** | 2.62 |  |  |  | **UCL** | 12.44 |  |  |  |
|  |  | **LCL** | 0 |  |  |  | **LCL** | 8.19 |  |  |  |

**Part 7** (not really sure what this question is asking referencing the blank figures is confusing)

**Part 8**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| I | Xi |  | MR | MRbar | UCL | LCL |  | x | Xbar | UCL | LCL |
| Jan | 8.7 |  |  | 1.06 | 3.47 | 0 |  | 8.7 | 8.3 | 11.12 | 5.48 |
| Feb | 8.7 |  | 0 | 1.06 | 3.47 | 0 |  | 8.7 | 8.3 | 11.12 | 5.48 |
| Mar | 7 |  | 1.7 | 1.06 | 3.47 | 0 |  | 7 | 8.3 | 11.12 | 5.48 |
| Apr | 6.8 |  | 0.2 | 1.06 | 3.47 | 0 |  | 6.8 | 8.3 | 11.12 | 5.48 |
| May | 9.6 |  | 2.8 | 1.06 | 3.47 | 0 |  | 9.6 | 8.3 | 11.12 | 5.48 |
| Jun | 9 |  | 0.6 | 1.06 | 3.47 | 0 |  | 9 | 8.3 | 11.12 | 5.48 |
|  |  | **MRBAR** | 1.06 |  |  |  | **Xbar** | 8.3 |  |  |  |
|  |  | **UCL** | 3.47 |  |  |  | **UCL** | 11.12 |  |  |  |
|  |  | **LCL** | 0 |  |  |  | **LCL** | 5.48 |  |  |  |

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**Part 9**

Favorable shift was detected in 3 (March), this represents the deficit falling below xbar.

**Part 10**

The favorable shift began in 2 (February) when it dropped from above xbar to below xbar.