Histogram

- Summarizes a large amount of data collected over a period of time and graphically represents frequency distribution in a bar graph format
- Data should be variable and measured on a continuous scale (i.e. time, weight, distance, speed, etc)
- When gathering data at least 50 data points should be used

Histogram

- Prepare a checksheet from the data collected; this checksheet represents how many minutes late each trailer was released while waiting for a KLS
- Count the number of data points collected (50)

Trailers Released Past Tact Time # of Minutes February 12 to 26				
1	5	7	8	23
10	5	21	9	5
3	2	6	12	7
7	11	23	14	8
4	12	2	4	12
11	19	13	12	15
10	18	12	11	16
17	18	19	16	18
2	18	5	11	24
22	13	3	17	7

Histogram

- Determine the data's range (r): Largest value in the data subtract the smallest value in the data (24-1=23= Range)
- Determine the number of data intervals needed (k): the square root of the total # of data points ($\sqrt{50}$ = 7.07 rounded off=7)

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Histogram

- **Determine the width of the data interval:**

  W= r/k= 23/7= 3.3

  and apply the width to the number of data intervals

7 Data Intervals @ 3.3 units wide

1-4.29	4.3-7.59	7.6-10.89	10.9-14.19	14.2-17.49	17.5-20.79	20.8-24.09

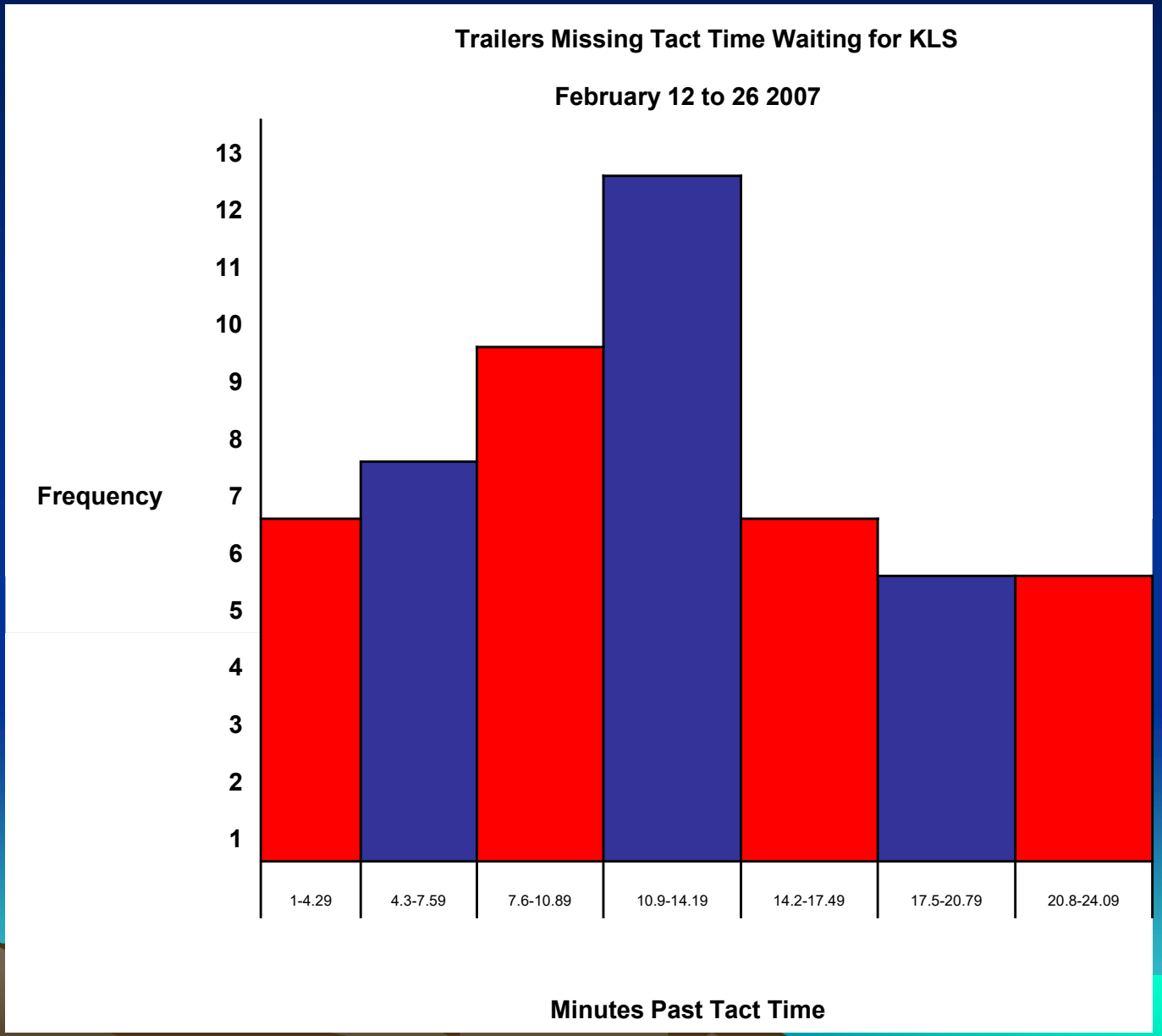
Histogram

- Construct a frequency table from the data on the checksheets

Data Interval	Frequency	Total
1- 4.29	𝍸 |	6
4.3- 7.59	𝍸 ||	7
7.6- 10.89	𝍸 𝍸	9
10.9- 14.19	𝍸 𝍸 ||	12
14.2- 17.49	𝍸 |	6
17.5- 20.79	𝍸	5
20.8- 24.09	𝍸	5

Histogram

- Draw the histogram



Histogram

- **Interpret the data:**
  - **Centering: where is the distribution centered?**
  - **Variation (spread): is the spread of the data too variable?**
  - **Shape: is the histogram bell shaped or skewed to one side or have multiple peaks?**
  - **Process Capability: is the histogram within the specified limits?**