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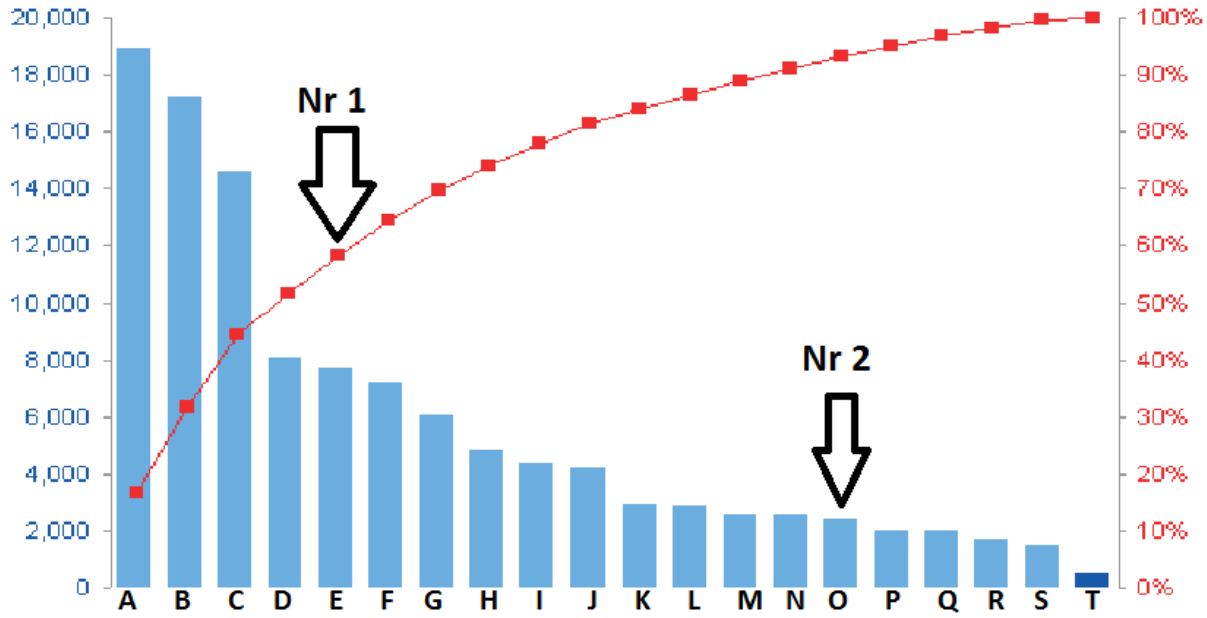
Exercise Topic: Seven Tools Of Quality

Exercise 1: Watch the video tutorial that shows how to create a histogram in Excel. Create a histogram based on the data below. Use a class width of 5. In other words, the first class or bar represents the values 1, 2, 3, 4 and 5. The second bar or class includes 6, 7, 8, 9 and 10. After creatibng the histogram, reflect on it. What kind of information can you infer from it?

Weight in grams	Weight in grams	Weight in grams	Weight in grams
18	10	17	9
16	8	13	11
13	10	11	12
14	9	8	29
18	10	7	31
5	23	8	36
2	16	9	

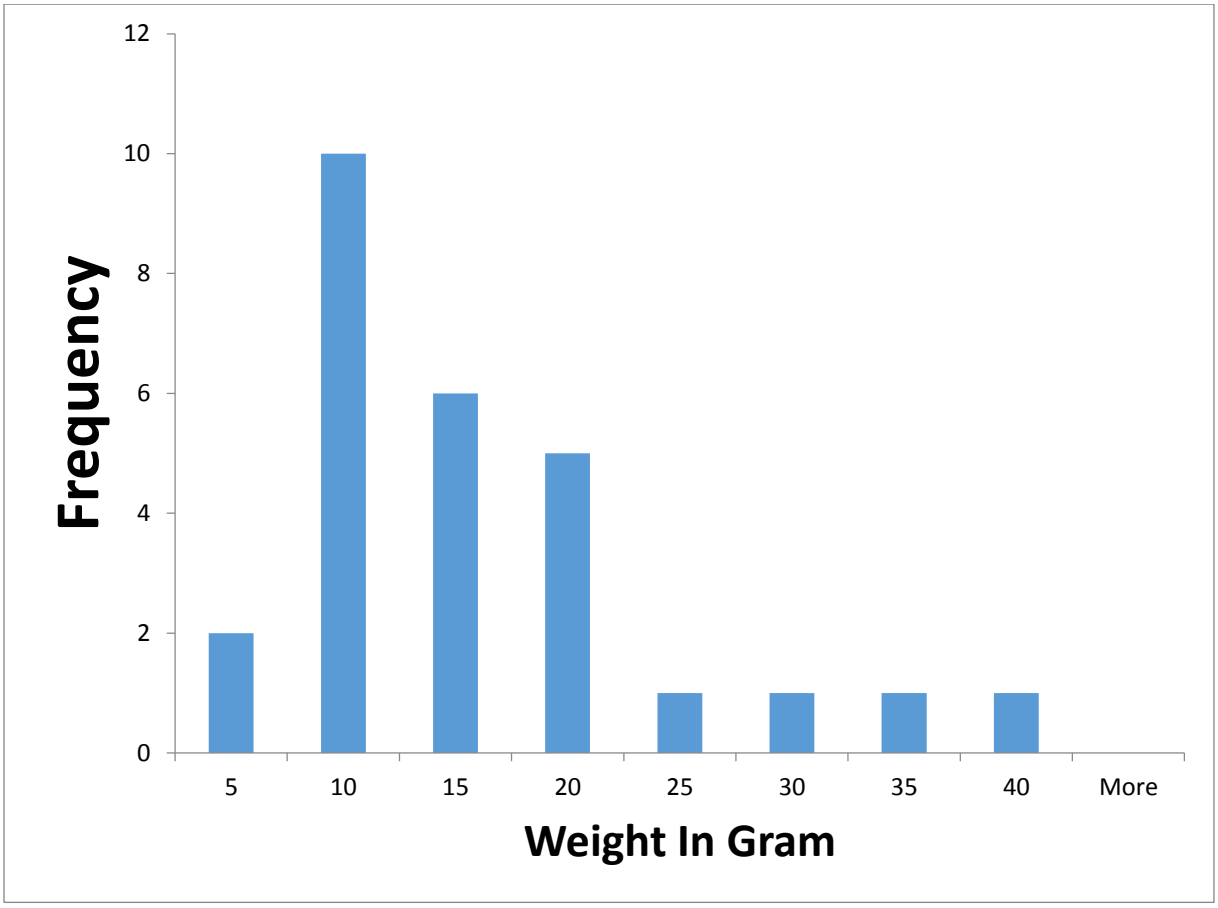
Exercise 2: Assume you created the Pareto chart below for the causes of defects in a manufacturing process. In that chart, interpret arrow 1 and 2.



See next page for answers

Answers

Answer exercise 1:



The histogram gives us an idea of the dispersion of the data. If these are the weights of a standard product (e,g, a candy bar), we seriously need to reduce this dispersion. It further seems that the data is right skewed. Ideally, you would like to see a fairly normal (or Gaussian, or bell shaped) distribution with minor, symmetrical dispersion.

Answer exercise 2: Arrow number 1 refers to the cumulative percentage line which has its axis on the right. It means that cause A, B, C, D and E together (or cumulatively) account for roughly 60% of the total problems.

Arrow number 2 refers to the bar chart which has its axis on the left side. Essentially, it means that 'cause O' was observed roughly 3,000 times.

Overall speaking, if you would tackle cause A-J, you will have solved roughly 80% of the problems. A Pareto chart is also sometimes referred to as a 80/20 chart because it helps us to find the 'vital few' factors that cause 80% of the problems. By analogy it helps us to steer away our attention and resources from the 'trivial many' factors that account for 20% of the problems. Do note that the 80/20 divide is just convention. If you wish to focus on the significant few factors that cause 90% of the problems, you can do so.