

**Instructions:** Show all work to receive full credit. You should note any formulas used or calculator functions used, their inputs and outputs. I cannot grade work if I don't know where an answer came from. Be sure complete all parts of each questions, including requests for interpretation and explanations. Be as thorough as possible.

1. Use the data in the table to answer the questions below.

14	16	16	16	17	18	18	20
20	21	22	23	24	27	30	

- a. Find the percentile of the 11<sup>th</sup> element in the list.

$$\frac{11}{15} = .733 \approx 73^{\text{rd}} \text{ percentile}$$

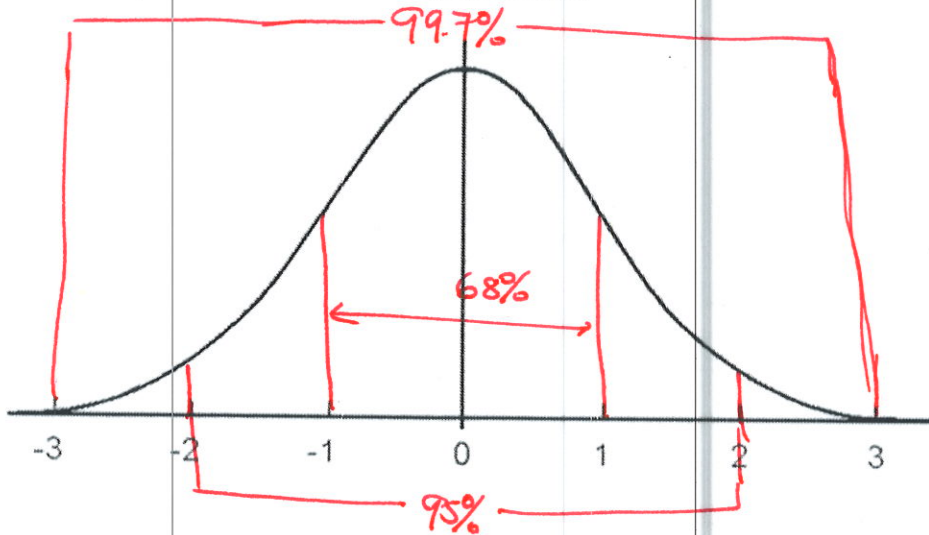
- b. What element in the list represents the 40<sup>th</sup> percentile? (The number of the element in the sorted list, not its value.)

$$.4 = \frac{x}{15} \Rightarrow x = 6^{\text{th}} \text{ element}$$

- c. What value in the list is closest to the 40<sup>th</sup> percentile?

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2. Draw the Empirical Rule on the blank graph below.



3. If a variable is distributed normally with a mean of 48 and a standard deviation of 11, use the Empirical Rule to find the percent of the population scoring above 59.

$$44 + 11 = 59$$

$$100 - 68 = 32$$

$$\frac{32}{2} = \boxed{16\%}$$