Name: _____

Date: _____

Z-Scores

Z-Score: a value that represents the number of standard deviations a data point is with respect to the mean

$$z = \frac{x - \bar{x}}{\sigma}$$

How do I find the Z-Score of a data set?

Why would someone want to know the z-score of a data value? (Hint: 1σ = 68% of the data falls within this range; 2σ = 95% of the data falls within this range; 3σ = 99.7% of the data falls within this range.)

Ex: If the mean of a data set is 8, and the standard deviation is 2.3, what is the Z-Score of the data value 9?

1. **If the standard deviation of a data set is 4, and the mean is 52, what is the Z-Score of the data value 43?**

2. **If the standard deviation of a data set is 1.7, and the mean is 40, what is the Z-Score of the data value 12?**

3. **What is the standard deviation of a data set whose mean is 13, and 10 falls at a Z-Score of 1?**

4. **What is the standard deviation of a data set whose mean is 60, and 10 falls at a Z-Score of -5?**

5. **What is the mean of a data set whose standard deviation is 2.3 and the data value 20 has a Z-Score of -1?**

6. **What is the mean of a data set whose standard deviation is 0.5 and the data value 9 has a Z-Score of 3?**

7. **Please find the Z-Score of the value 3.2 for the following data set: 3, 4, 5, 5, 6, 6, 7**

Name: _____

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<u>Z-Scores – Hand In</u>

Please find the Z-Score of the value 1.5 for the following data set: 1, 2, 2, 3, 3, 3, 4, 4, 5