**GSE Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Unit: 7** | **Homework**: 6 |
| **Standard**:**Summarize, represent, and interpret data on a single count or measurement variable** **MCC9-12.S.ID.4** Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. |
| **Essential Question:** How is discrete data different from continuous data? How can you tell if a set of values is normally distributed? |
| **Key Words**: **continuous data, discrete data, normal distribution, normal curve, symmetric distribution, uniform distribution, probability distribution, random variable, Empirical Rule** |
| 1. The distribution of heights of adult American men is approximately normal with a mean of 69 inches and a standard deviation of 2.5 inches.
	1. Sketch a normal curve on which the mean and standard deviation are located, together with the associated heights.
	2. What percent of men are taller than 74 inches?
	3. Between what heights do the middle 95% of men fall?
	4. What percent of men are shorter than 66.5 inches?
	5. A height of 71.5 inches corresponds to what percentile of adult male American heights?
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| 1. The distribution of weights of 9-ounce bags of a particular brand of potato chips is approximately normal with a mean of 9.12 ounces and a standard deviation of 0.15 ounces.
	1. Draw an accurate sketch of the distribution of potato chip bag weights.
	2. A bag that weighs 8.97 ounces is at what percentile in this distribution?
	3. What percent of 9-ounce bags of this brand of potato chips weigh between 8.67 ounces and 9.27 ounces?
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| 1. Owners of a minor league baseball team believe a normal model is useful in projecting the number of fans who will attend home games. They use a mean of 8500 fans and a standard deviation of 1500 fans. Draw and label a model to represent this.
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| 1. Intelligence Quotient (IQ) is normally distributed with a mean of 100 and a standard deviation of 15.
	1. Sketch a normal distribution curve to reflect this information.
	2. Find the probability a person picked at random out of the general population has an IQ in the given interval:
		* 1. Between 100 and 115.
			2. Between 85 and 130.
			3. Between 130 and 145.
			4. Over 130.
			5. Less than 55.
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