Math 3 **9.2 Normal Distribution** Unit 9

*SWBAT graph the distribution of a normal bell curve.*

**Normal distribution**: Has data that vary randomly about the mean; has a “normal curve,” also known as the bell curve.

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| Empirical Rule |   |

**Example 1:** The following normal distribution describes the repair times for a local auto shop. Answer the questions below:

1. What is the mean repair time for the auto shop?
2. What percentage of repairs take between 84 and 120 minutes?
3. What percentage of the repairs take less than 2 hours?
4. What percentage of repairs are between 84 minutes and 138 minutes?
5. If the shop did 200 repairs this week, approximately how many of them took more than 2 hours?

**Example 2:** Sketch a normal curve for the following distribution: mean = 45, standard deviation = 5

**Example 3:** In a set of test scores that are normally distributed, a test score of 70 is 3 standard deviations below the mean. A score of 86 is 1 standard deviation above the mean. What is the mean of the data?





