Algebra II Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lesson 12-7 Normal Distributions Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hour\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HW # 6 WS

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| A set of data with a mean of 45 and a standard deviation of 8.3 is normally distributed. Find each value, given its distance from the mean. |
| 1. +1 standard deviation from the mean | 2. +3 standard deviations from the mean |
| 3. −1 standard deviation from the mean | 4. −2 standard deviations from the mean |
| Sketch a normal curve for each distribution. Label the x-axis as one, two, and three standard deviations. |
| 5. mean = 95; standard deviation = 12 | 6. mean = 100; standard deviation = 15 |
| A set of data has a normal distribution with a mean of 5.1 and a standard deviation of 0.9. **Find the percent** of data within each interval. Sketch curve in the space below.  |
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| 7. between 4.2 and 5.1 | 8. between 6.0 and 6.9 | 9. greater than 6.9 |
| 10. between 4.2 and 6.0 | 11. less than 4.2 | 12. less than 5.1 |
| 13. Scores on an exam are normally distributed with a mean of 76 and a standard deviation of 10. Sketch curve below |
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| a) In a group of 230 tests, how many students score above 96? | b) In a group of 230 tests, how many students score below 66? | c) In a group of 230 tests, how many students score within one standard deviation of the mean? |
| 14. The number of nails of given length is normally distributed with a mean length of 5.00 in. and a standard deviation of 0.03 in. Sketch curve below. |
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| a) Find the number of nails in a bag of 120 that are less than 4.94 in. long. | b) Find the number of nails in a bag of 120 that between 4.97 and 5.03 in. long. | c) Find the number of nails in a bag of 120 that are over 5.03 in. long. |