Algebra II   Unit 7 Statistics Review   Name: __Key_____
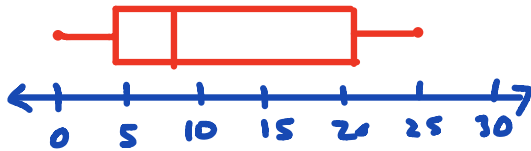
Use the following data for the questions below: 2, 4, 5, 8, 20, 25, 21, 8, 5

   1. Draw a box plot.

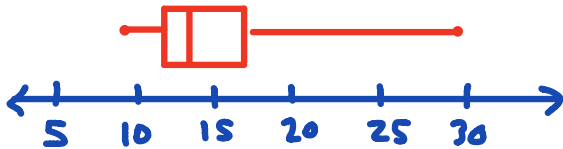   2. Are there any outliers? If so, what points?

      No

   3. Find the IQR and range.

      IQR = 16   range = 23

Use the following data for the questions below: 12, 13, 29, 9, 17, 15, 13

   4. Draw a box plot.
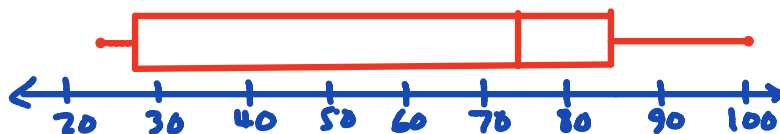

   5. Are there any outliers? If so, what points?

      29

   6. Find the IQR and range.

      IQR = 5   range = 20

Use the following data for the questions below: 25, 30, 100, 85, 20, 75, 74, 86

   7. Draw a box plot.

$4 \mid 75, 85 \mid 86, 100$

74.5   85.5


   8. Are there any outliers? If so, what points?

      No

   9. Find the IQR and range.

      IQR = 58   range = 75

The average hours of sleep a student athlete gets is 7 hours. The number of hours a student athlete receives is uniformly distributed and has an interval of 5 to 9. The Georgia Athletic Association states athletes need to receive at least 8 hours of sleep.

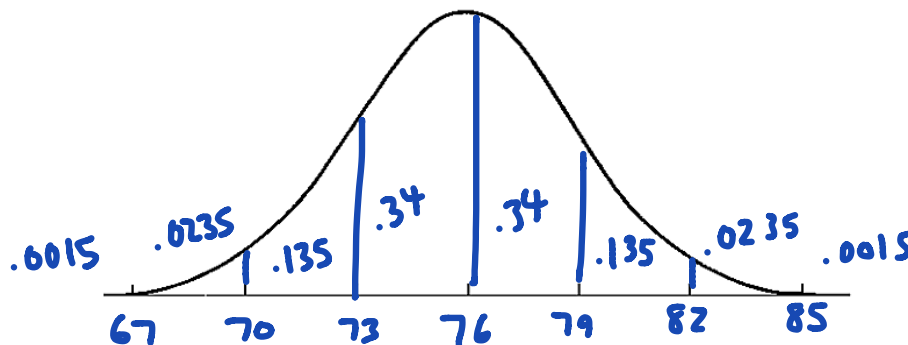10. Create the uniform distribution below.
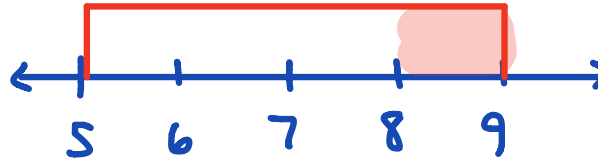
11. What is the proportion of students who are getting enough sleep?

$$\frac{1}{4} = .25 = 25\%$$

The average score on a science test is 76, with a standard deviation of 3 and a normal distribution. Using that information, answer the questions below.

12. Create the normal distribution below.

.0015   .0235   .135   .34   .34   .135   .0235   .0015

67   70   73   76   79   82   85

13. What percent of test takers scored between a 73 and an 85?

83.85%

14. Alice scored a 70 on the test. What percent of test takers did she outperform?

2.5%

15. The manufacturing specifications for nails produced at a machine shop require a minimum length of 24.8 centimeters and a maximum length of 25.2 centimeters. The operator of the machine shop adjusts the nail-making machine so that the machine produces nails with a mean length of 25.0 centimeters. What standard deviation is required for 95% of the nails to meet manufacturing specifications? Assume the lengths of nails produced by the machine are normally distributed.

$$\sigma = .1$$

16. In the 2012 Olympics, the mean finishing time for the men's 100-meter dash finals was 10.10 seconds and the standard deviation was 0.72 second. Usain Bolt won the gold medal, with a time of 9.63 seconds. Assume a normal distribution. What was Usain Bolt's z-score?

$$Z = -0.65$$

17. Lindsay earned a 98 on her final exam for biology. The mean score was 78.2 and the standard deviation was 8.4. What percent of students did Lindsay out perform?

$$99.09\%$$

18. After the first round of fitness training, the director of a police academy plans to eliminate the bottom 20% of candidates based on individual fitness scores. Fitness scores were normally distributed, with a mean of 72.0 and a standard deviation of 18.5. What fitness score does a candidate need to stay in the academy?

$$56.46$$

19. If a population of human body temperatures is normally distributed with a mean of 98.2 °F and a standard deviation of 0.7 °F, estimate the percent of temperatures between 98.0 °F and 99.0 °F.

$$48.71$$