

# HOMWORK: STANDARD DEVIATION

NAME: \_\_\_\_\_

DAY 4 DUE: \_\_\_\_\_

1. Scores on the SAT verbal test in recent years are approximately normal with mean 505 and standard deviation 45.

a. What percent of students scored below a 460?

18.5%



b. What percent of students scored between 460 and 595?

81.5%

c. How high must a student score in order to place in the top 16% of all students?

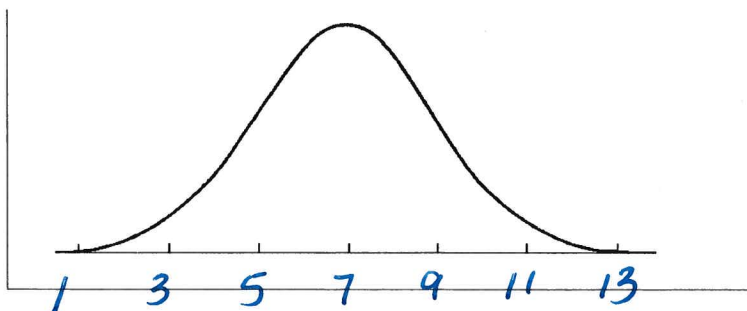
550

d. How many students scored between a 460 and 595 out of 250 students?

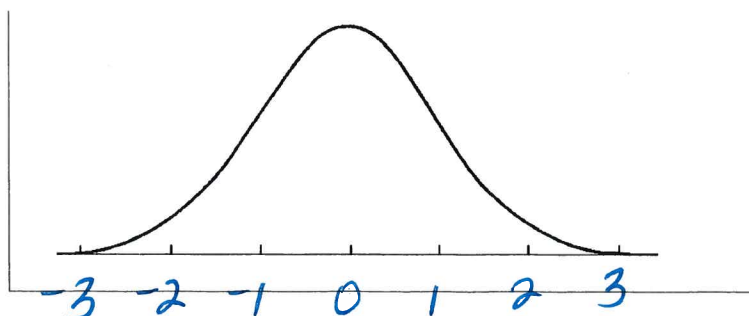
$$(250)(0.815) = \text{203.75 students}$$

#1 – 6: Represent each of the following distributions on the normal distribution graph given. For each, show three standard deviations to the left and three standard deviations to the right of the mean.

2. A normal distribution with a mean of 7 and a standard deviation of 2.

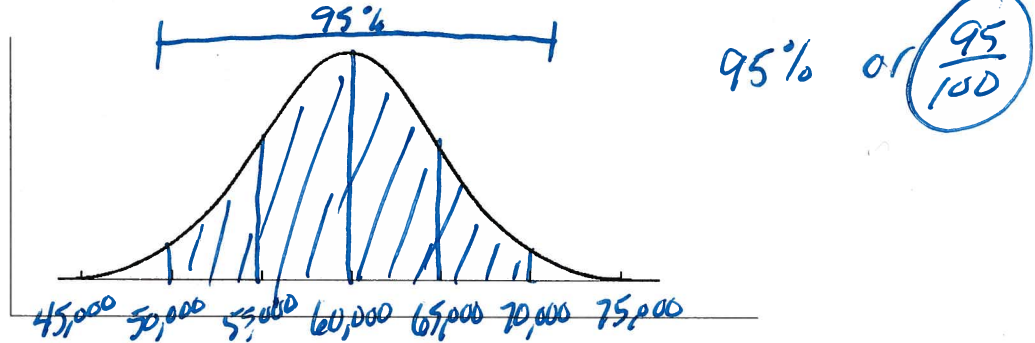


3. A standard normal distribution.

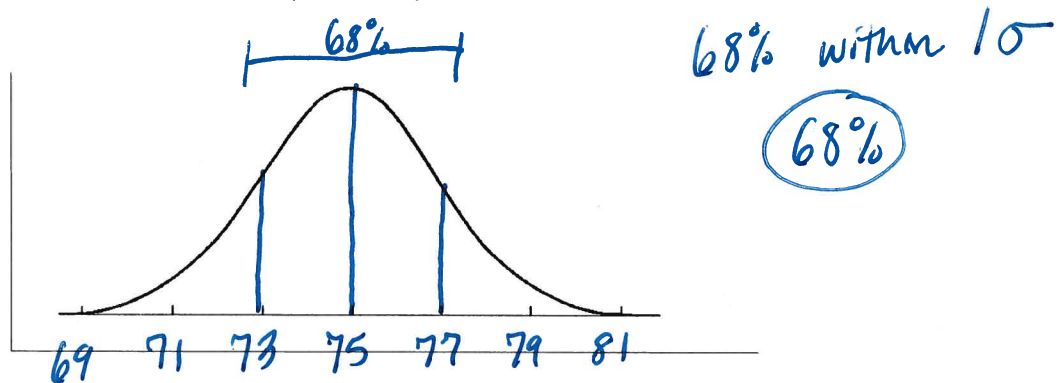


#4 - 6: Represent each of the following distributions on the normal distribution graph given. For each, show three standard deviations to the left and three standard deviations to the right of the mean. Then answer the question using the 68-95-99.7 Rule (Do NOT use "normalcdf" in the calculator)

4. The length of wear on Spinning Tires is normally distributed with a mean of 60,000 miles and a standard deviation of 5,000 miles. Shade the region under the curve that represents the fraction of tires that last between 50,000 miles and 70,000 miles. What fraction of tires does that represent?



5. The number of crackers in a box of Crackerbox Crackers is normally distributed with a mean of 75 and a standard deviation of 2. Shade the region under the curve that represents the probability that a box has between 73 and 77 crackers. What is that probability?



6. The length of time it takes to groom a dog at Shaggy's Pet Shoppe is normally distributed with a mean of 45 minutes and a standard deviation of 10 minutes. Shade the region under the curve that represents the percent of dog grooming times greater than 65 minutes. What is that percent?

