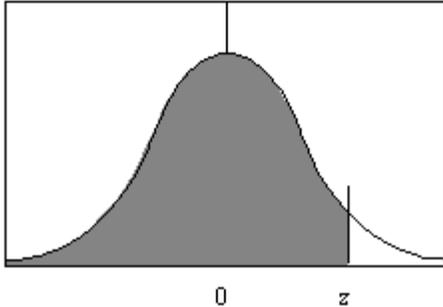


Name: _____ Date: _____

1. Stating that the area under the standard normal distribution curve between $z = 0$ and $z = 1.00$ is 0.3413, is the same as stating that the _____ of randomly selecting a standard normally distributed variable z with a value between 0 and 1.00 is 0.3413.
2. Find the z value to the right of the mean such that 85% of the total area under the standard normal distribution curve lies to the left of it?



3. Mrs. Smith's reading class can read an average of 175 words per minute with a standard deviation of 20 words per minute. The top 3% of the class is to receive a special award. What is the minimum number of words per minute a student would need to read in order to get the award? Assume the data is normally distributed.
4. What is the z value such that 50% of the total area under the standard normal distribution curve lies to the right of it?
5. At a large department store, the average number of years of employment for a cashier is 5.7 with a standard deviation of 1.8 years, and the distribution is approximately normal. If an employee is picked at random, what is the probability that the employee has worked at the store for over 10 years?
6. A survey of 250 lobster fishermen found that they catch an average of 32.0 pounds of lobster per day with a standard deviation of 4.0 pounds. If a random sample of 36 lobster fishermen is selected, what is the probability that their average catch is less than 31.5 pounds? Assume the distribution of the weights of lobster is normal.

7. As the sample size n increases, the shape of the distribution of the sample means taken with replacement from a population with mean μ and standard deviation σ , will approach a normal distribution. This distribution will have a mean of μ and a standard deviation of $\frac{\sigma}{\sqrt{n}}$. This is a statement of the _____.
8. In order to have the standard error of the mean be 13, one would need to take _____ samples from a normally distributed population with a standard deviation of 65.
9. Of the members of a Boy Scout troop, 15% have received the first aid merit badge. If 40 boy scouts are selected at random, find the probability that four or more will have the first aid merit badge?
10. A biologist estimates that 50% of the deer in a region carry a certain type of tick. For a sample of 300 deer selected at random, what is the chance that 155 or fewer deer have this tick?

Answer Key

1. probability
2. 1.04
3. 213
4. zero
5. 0.8%
6. 22.66%
7. central limit theorem
8. 25
9. 86.6%
10. 0.737