Quiz 6 Normal Distribution. COB 191 Name _____ Grade _____

Excel Reminders:

= NORMSDIST(z value) **= NORMSINV (probability)**

= NORMDIST (x value, mu, sigma, TRUE) **= NORMINV (probability, mu, sigma)**

Please provide computational details for questions and problems to get any credit.

1. What is the mean (μ) _____ and std (σ) _____for the variable z if the variable z is a STANDARD normally distributed random variable.

The following problem is associated with Questions 2 to 9.

The random variable z is normally distributed with mean = 0 and standard deviation = 1.

2. What is the notation _____ and the value _____ for the probability that z is less than or equal to 2.33?
3. Draw the normal curve and mark the question and your answer on the curve.
4. The Excel command to be used to compute the probability that z is less than or equal to 2.33 is? _____
5. What is the notation _____ and the value _____ for the probability that z is greater than or equal to 2.88?
6. The Excel command to be used to compute the probability that z is greater than or equal to 2.88 is? _____
7. What is the notation _____ and the value _____ for the probability that z is greater than or equal to 1.96 and less than or equal to 2.88?
8. Draw the normal curve and mark the question and your answer on the curve.
9. How would Excel be used to compute the probability that z is greater than or equal to 1.96 and less than or equal to 2.88?

The following problem is associated with Questions 10 to 15.

The mileage of Firestone tires follows normal distribution and has the mean tire mileage μ = 36,500 miles and the standard deviation σ = 5,000 miles. Please draw a normal curve, label the question and answer first for each question.

10. What is the probability that a randomly selected Firestone tire lasts less than 46,300 miles?
11. The Excel command to be used to compute the probability that a randomly selected Firestone tire lasts less than 46,300 miles?_____
12. What is the probability that a randomly selected Firestone tire lasts more than 30,250 miles?
13. The Excel command to be used to compute the probability that a randomly selected Firestone tire lasts more than 30,250 miles?_____
14. What is the probability that a randomly selected Firestone tire lasts more than 30,250 miles and less than 46,300 miles?
15. What is the probability that a randomly selected Firestone tire lasts exactly 36,500 miles?