

Participation 5

Name:

Date:

1. Refer to Example 1 from section 6.2 and answer the following questions.

(a) What is the mean and variance given in the problem?

(b) What is the probability that the pregnancy will last more than 320 days?

(c) Suppose two friends are pregnant? How likely is it that both pregnancies will last more than 320 days?

2. Find

(a) $Z_{0.03}$

(b) $Z_{0.07}$

3. The distance that a Tesla model 3 can travel is normally distributed with a mean of 260 miles and a standard deviation of 25 miles.

(a) What is the probability that a randomly selected Tesla model 3 can travel more than 310 miles?

(b) What is the probability that a randomly selected Tesla model 3 can travel less than 300 miles?

(c) What is the probability that a randomly selected Tesla model 3 can travel between 235 miles and 310 miles?

(d) Now, suppose that you pick a random sample of 9 Tesla model 3. What is the probability that the sample mean will be more than 250 miles.

(e) Does the Central Limit Theorem applies in Part (d)? Explain.