

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.