The manager of a fast-food restaurant wants to reduce the proportion of drive-through customers who have to wait more than 2 minutes to receive their food once their order is placed. Based on store records, the proportion of customers who had to wait at least 2 minutes was $p = 0.63$. To reduce this proportion, the manager assigns an additional employee to assist with drive-through orders. During the next month the manager will collect a random sample of drive-through times and test the following hypotheses:

- $H_0: p = 0.63$
- $H_a: p < 0.63$

where $p$ is the true proportion of drive-through customers who have to wait more than 2 minutes after their order is placed to receive their food.

A. Describe a Type I and a Type II error in this setting and explain the consequences of each.

Type I:

Type II:

B. Suppose that the manager decided to carry out this test using a random sample of 250 orders and a significance level of $\alpha = 0.10$. What is the probability of making a Type I error?