

Name:

Homework 10 Decisions with Deviation

1. The Typhoon Twister water ride has a minimum height requirement of 5 feet. The average height of children who visit this amusement park is 4 feet 10 inches, with a standard deviation of 2 inches.

Approximately what percentage of the children who come to the park qualify to ride the Typhoon Twister? Explain. (Assume that the distribution of children's heights is approximately normal.)

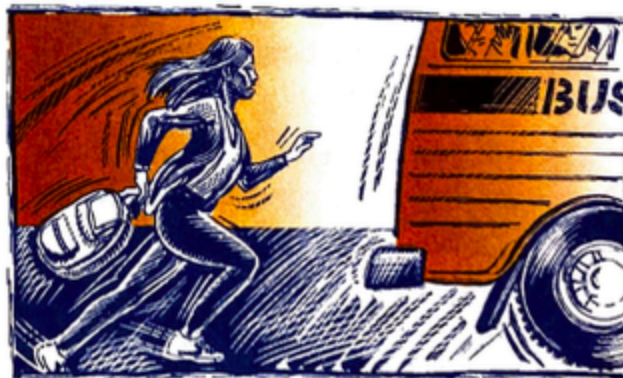
2. Lob and Smash is a company that manufactures tennis balls. The company wants to get a contract to provide the Big Bucks Tennis League with tennis balls for its tournaments.

The tennis league wants tight control over the bounce of the tennis balls it uses. The league has a standard "bounce test," and it wants balls that bounce approximately 3 feet (when dropped from a certain height), varying no more than 2 inches from this amount.

The bounce of the Lob and Smash tennis balls is approximately normally distributed. Using the league's test, these tennis balls were shown to have a mean bounce height of 2 feet, 11 inches, with a standard deviation of 0.5 inch.

Should the Big Bucks Tennis League use Lob and Smash tennis balls? Why or why not?

3. The time it takes Sam to get out of bed, get dressed, eat, and catch the bus varies from morning to morning. Measuring from the moment she wakes up until she reaches the bus stop, her routine takes an average of 15 minutes and has a standard deviation of 5 minutes. (Assume that the duration of her routine is normally distributed.)



Sam likes to catch the 7:00 a.m. bus so that she can arrive early at school and visit with her friends. What time should she wake up in order to catch this bus about 84% of the time?