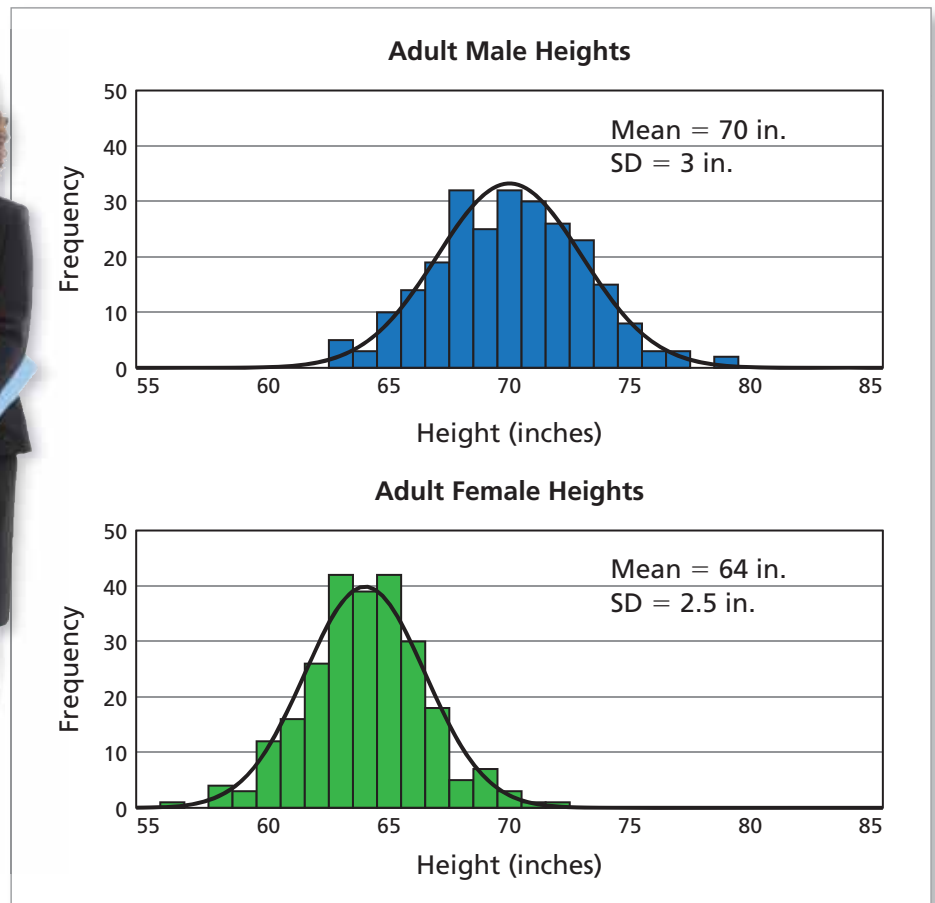EXAMPLE 4   **Comparing Distributions**

The graphs show the distributions of samples of heights of adult American males and females. There are 250 people in each sample.

a. What is the significance of the smaller standard deviation for females?

b. Estimate the percent of male heights between 67 inches and 73 inches.

Adult Male Heights

Mean = 70 in.
SD = 3 in.

Frequency / Height (inches)

Adult Female Heights

Mean = 64 in.
SD = 2.5 in.

Frequency / Height (inches)

SOLUTION

a. Standard deviation is a measure of dispersion. The larger the standard deviation, the more the data are spread out. So, if these two samples are representative of male and female heights in the United States, you can conclude that male heights have a greater variation than female heights.

b. The data for male heights appear to be normally distributed. If this is true, then you can conclude that about 68% of adult male heights are between 67 inches (5' 7") and 73 inches (6' 1").

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In a study, Timothy Judge and Daniel Cable found that each additional inch of height is worth an extra $789 per year in salary. According to Judge, "Height matters for career success." Do you agree with Judge's claim? Explain.