# Analysis of Z-Score for Woman's Height

To calculate the z-score for a woman who is six feet tall, I need to convert this measurement to a standardized value relative to the distribution.

Given:

- Height distribution is normal with μ = 65.5 inches and σ = 2.5 inches

- The woman's height is 6 feet = 72 inches

The z-score formula is:

z = (x - μ)/σ

Substituting the values:

z = (72 - 65.5)/2.5

z = 6.5/2.5

z = 2.6

This z-score indicates that a 6-foot tall woman stands 2.6 standard deviations above the mean height in this population, placing her in approximately the 99.5th percentile of the height distribution.

The answer is (A) 2.6.