

Answer on question #34823 – Math – Statistics and Probability

Heights of men on a baseball team have a bell-shaped distribution with a mean of 180 cm and a standard deviation of 9 cm. Using the empirical rule, what is the approximate percentage of the men between 162 cm and 198 cm?

Solution

The empirical rule states that for the data sets having a distribution that is approximately bell-shaped, the following properties apply:

- About 68% of all values fall within 1 standard deviation of the mean
- About 95% of all values fall within 2 standard deviation of the mean
- About 99.7% of all values fall within 2 standard deviation of the mean

$198 - 180 = 18$ which is 2×9 . Thus, 198 is 2 standard deviations to the right of the mean. $180 - 162 = 18$ which is 2×9 . Thus, 162 is 2 standard deviations to the left of the mean.

Since 162 to 198 is within 2 standard deviations of the mean, we know that about 95% of the men would be between 162 cm and 198 cm.

Answer: 95%.