Standard Deviation Worksheet

Jenna has bought a new hybrid car. Each week for a period of seven weeks, she has noted the fuel efficiency (in miles per gallon) of her car. The results are shown below.

$$45 \quad 44 \quad 43 \quad 44 \quad 45 \quad 44 \quad 43$$

a) Calculate the standard deviation of these results to the nearest hundredth. Be sure to show your work.

b) What is the meaning of the standard deviation you found?

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a) Calculate the standard deviation of these results to the nearest hundredth. Be sure to show your work.

The mean is 44.

The deviations from the mean are $1, 0, -1, 0, 1, \ 0, \ -1$.

The squared deviations from the mean are $1, 0, 1, 0, \ 1, \ 0, 1$.

The sum of the squared deviations is 4.

$$n = 7; \ \frac{4}{6} \approx 0.667$$

The standard deviation is $\sqrt{0.667}$ which is approximately 0.82 miles per gallon.

b) What is the meaning of the standard deviation you found?

The standard deviation, 0.82 miles per gallon, is a typical deviation of a weekly fuel efficiency value from the mean weekly fuel efficiency.

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