Name _____

13-3B Lesson Master

SKILLS Objective C

In 1–4, a data set contains 35 elements, d_1 through d_{35}. Tell what each expression represents. Let μ be the mean of the data set.

1. $\displaystyle\sum_{i=1}^{35} d_i$ _____

2. $\dfrac{1}{35}\displaystyle\sum_{i=1}^{35} d_i$ _____

3. $\dfrac{1}{35}\displaystyle\sum_{i=1}^{35}\left| d_i - \mu \right|$ _____

4. $\sqrt{\dfrac{1}{35}\displaystyle\sum_{i=1}^{35}(d_i - \mu)^2}$ _____

In 5 and 6, a data set contains n elements, x_1 through x_n. Give an expression for each measure.

5. the mean _____

6. the standard deviation _____

7. **Matching** Indicate which item in the second column most closely matches the item in the first column for a data set $S = \{x_1, x_2, \ldots, x_n\}$. Let μ be the mean of S.

a. mean absolute deviation _____

b. $\displaystyle\sum_{i=1}^{n} x_i$ _____

c. $\sqrt{\dfrac{1}{n}\displaystyle\sum_{i=1}^{n}(x_i - \mu)^2}$ _____

d. the mean _____

A the sum of the elements

B the standard deviation

C $\dfrac{1}{n}\displaystyle\sum_{i=1}^{n} x_i$

D $\dfrac{1}{n}\displaystyle\sum_{i=1}^{n}\left| x_i - \mu \right|$

USES Objective I

8. A city's daily high temperatures in degrees Fahrenheit for one week in July are 88, 91, 94, 94, 87, 89, and 80.

a. Find the mean. _____

b. Find the deviations from the mean. _____

c. Find the mean absolute deviation. _____

d. Find the standard deviation. _____

e. What would the temperature need to be on day seven in order to result in a mean temperature of 90? _____

Name _____

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9. A city's low temperatures in degrees Fahrenheit for one week in
    January are 3, 0, –6, –11, –6, –2, and –6.

    a. Find the mean. _____

    b. Find the deviations from the mean. _____

    c. Find the mean absolute deviation. _____

    d. Find the standard deviation. _____

    e. What would the temperature need to be on
        day seven in order to result in a mean temperature of 0? _____

10. The graph at the right shows the number of sit-ups done by the
    members of a karate team.
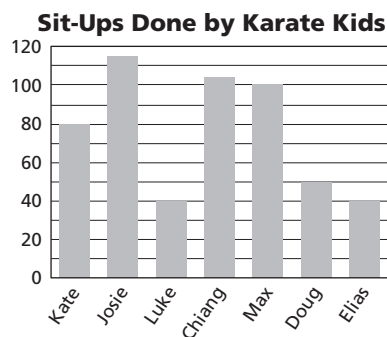
    a. Find the mean. _____

    b. Find the standard deviation. _____

Sit-Ups Done by Karate Kids

11. Here are the heights in inches of the girls in two Brownie troops.

    Troop A: 39, 35, 36, 42, 44, 41, 37, 42

    Troop B: 42, 42, 37, 38, 42, 36, 37, 42

    a. Find the mean of each troop's data.

    _____

    b. Find the standard deviation of each troop's data.

    _____

    c. What do your answers to Parts a and b tell you about the heights of the girls in the two
        Brownie troops?

    _____

    _____

    _____