Practice

Form G

Standard Deviation

Find the mean, variance, and standard deviation for each data set.

1. 232 254 264 274 287 298 312 342 398

2. 26 27 28 28 28 29 30 30 32 35 35 36

3. 2.2 2.2 2.3 2.4 2.4 2.4 2.5 2.5 2.5 2.6

4. 75 73 77 79 79 74 81 74 70 68 70 72

Graphing Calculator **Find the mean and the standard deviation.**

5. price of XYZ Company stock for the first 12 weeks of 2006

5.34	5.40	5.41	5.42	5.50	5.55
5.55	5.57	5.70	5.65	5.66	5.68

6. price of XYZ Company stock for the first 12 weeks of 2009

6.00	5.95	5.92	5.80	5.81	5.75
5.75	5.75	5.64	5.52	5.40	5.03

Determine the whole number of standard deviations that includes all data values.

7. The hours students in your study group study is 66.1 min; the standard deviation is 2.9 min.

   62 63 65 64 64 68 68 69 72 66

8. The mean weight of your pets is 18.25 lb; the standard deviation is 30.1 lb.

   0.25 0.25 6 8 10 85

9. Use the data for average daily water usage of a family during the past 10 months. Find the mean and the standard deviation of the data. How many items in the data set fall within one standard deviation of the mean? Within two standard deviations?

   124 gal   113 gal   152 gal   545 gal   150 gal
   490 gal   442 gal   207 gal   124 gal   147 gal

10. Reasoning In Lesson 11-5 an outlier is defined as a value "substantially different from the rest of the data in a set." How could you use the concept of standard deviation to rewrite this definition?

Practice (continued) — Form G

Standard Deviation

Find the standard deviation for each data set. Use the standard deviations to compare each pair of data sets.

11. prices of the first 10 cars sold at Joe's Used Car Lot in 1998:
$900 $1300 $1200 $850 $800 $1250 $795 $950 $1020 $975

prices of the first 10 cars sold at Joe's Used Car Lot in 2008:
$2500 $2700 $3600 $5000 $1900 $6175 $4000 $7200 $9250 $3000

12. times of boys in 100-m dash state high-school finals in 1998:
10.43 10.48 10.49 10.51 10.61 10.63 10.66 10.92

times of boys in 100-m dash state high-school finals in 2008:
10.32 10.38 10.39 10.48 10.70 10.74 10.83 10.90

Use the chart at the right for Exercises 13–17.

13. Find the mean amount of money raised for each year.

14. Find the standard deviation for each year.

15. Writing Use the standard deviation for each year to describe how school fundraising varied from 2006–2007 to 2007–2008.

16. For 2007–2008, the amounts raised by which clubs are not within one standard deviation of the mean?

Fundraising at Smithburg High School

Club	2006–2007	2007–2008
Adventure	$500	$600
Car	$250	$250
Chess	$100	$120
Drama	$1500	$1400
Ecology	$475	$300
Film	$150	$250
Service	$2200	$4500
Spirit	$1000	$1500

17. Error Analysis A student says that the amounts raised in 2006–2007 by the Drama Club, Service Club, and Spirit Club are not within one standard deviation of the mean. Do you agree? Explain.

18. a. Make a table showing the heights of ten books in your home.
b. Find the mean and standard deviation of the data.