39.

Verbal IQ Score of Subject Exposed to Lead	Frequency
50–59	4
60–69	10
70–79	25
80–89	43
90–99	26
100–109	8
110–119	3
120–129	2

40.

Years President Lived After First Inauguration	Frequency
0–4	8
5–9	2
10–14	5
15–19	7
20–24	4
25–29	6
30–34	0
35–39	1

41. The Empirical Rule Based on Data Set 1 in Appendix B, blood platelet counts of women have a bell-shaped distribution with a mean of 280 and a standard deviation of 65. (All units are 1000 cells/μL.) Using the empirical rule, what is the approximate percentage of women with platelet counts

a. within 2 standard deviations of the mean, or between 150 and 410?

b. between 215 and 345?

42. The Empirical Rule Based on Data Set 3 in Appendix B, body temperatures of healthy adults have a bell-shaped distribution with a mean of 98.20°F and a standard deviation of 0.62°F. Using the empirical rule, what is the approximate percentage of healthy adults with body temperatures

a. within 1 standard deviation of the mean, or between 97.58°F and 98.82°F?

b. between 96.34°F and 100.06°F?

43. Chebyshev's Theorem Based on Data Set 1 in Appendix B, blood platelet counts of women have a bell-shaped distribution with a mean of 280 and a standard deviation of 65. (All units are 1000 cells/μL.) Using Chebyshev's theorem, what do we know about the percentage of women with platelet counts that are within 2 standard deviations of the mean? What are the minimum and maximum platelet counts that are within 2 standard deviations of the mean?

44. Chebyshev's Theorem Based on Data Set 3 in Appendix B, body temperatures of healthy adults have a bell-shaped distribution with a mean of 98.20°F and a standard deviation of 0.62°F. Using Chebyshev's theorem, what do we know about the percentage of healthy adults with body temperatures that are within 3 standard deviations of the mean? What are the minimum and maximum body temperatures that are within 3 standard deviations of the mean?

3-3 Beyond the Basics

45. Why Divide by $n - 1$? Let a *population* consist of the values 2 min, 3 min, 8 min. (These are departure delay times taken from American Airlines flights from New York's JFK airport to Los Angeles. See Data Set 15 in Appendix B.) Assume that samples of two values are randomly selected *with replacement* from this population. (That is, a selected value is replaced before the second selection is made.)

a. Find the variance σ^2 of the population {2 min, 3 min, 8 min}.

b. After listing the nine different possible samples of two values selected with replacement, find the sample variance s^2 (which includes division by $n - 1$) for each of them; then find the mean of the nine sample variances s^2.