

- E93.** $176 \pm (1.645)30$ or 126.65 mg/dL and 225.35 mg/dL
- E94.** **a.** Except for a slight bulge around .320, the batting averages look quite normal in their distribution.
b. The mean is about .270, and the standard deviation is about .030.
c. The z -score for .300 is about 1. About 16% of the players batted over .300.
d. The histogram shows about 31 of the 187 players, or about 16.6%, batted over .300. The estimate was quite close.
- E95.** **a.** Again, the histogram of batting averages looks quite normal in shape with center at about .260. The standard deviation is approximately .040.
b. The batting averages in both leagues have distributions that are approximately normal in shape. The American League has a higher mean (by about .010) and less spread.
c. The z -score corresponding to .300 in the National League is $z = 1$. The corresponding batting average, x , in the American League would still be 1 standard deviation above the mean, or

$$x = .270 + (1)(.030) = .300$$

so that batter would be expected to have a similar batting average in the American League.

AP Sample Test

- AP1.** B
AP2. C
AP3. A
AP4. D
AP5. D
AP6. B
AP7. E. Without knowing whether the distribution of scores is close to normal, you can't make an accurate assessment of this probability.
AP8. C
AP9. **a.** 1,806
b. Bacon himself
c. For Bacon and for Connery, $n = 645,957$. The mean Bacon number is 2.9. The mean Connery number is only 2.7. Connery is the better center. Also, Connery has only 4,140 actors who are outliers, that is, those with Connery numbers of 5 to 8 (not counting the outlier "0," himself), whereas 8,503 actors have Bacon numbers 5 to 8. That is, there are more people with a distant connection to Bacon than to Connery.
d. Students should realize that the numbers must be equal. The number is 2: Sean Connery was in *The Untouchables* (1987) with Kevin Costner, who was in *JFK* (1991) with Kevin Bacon.