11-5 Additional Practice

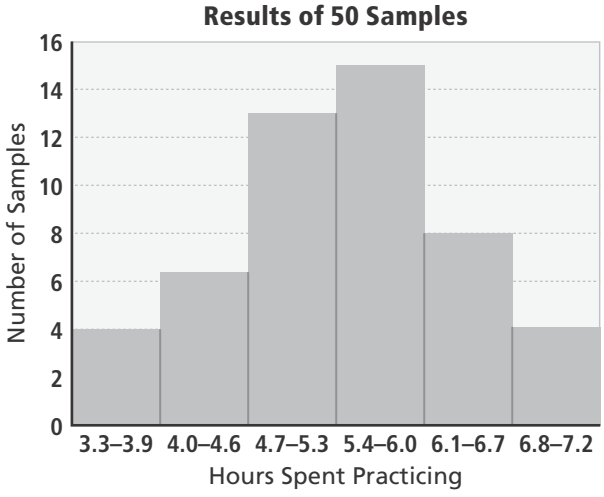
Margin of Error

Kenji surveys 10 student athletes. He asks them what sport they play, and how many hours per week they spend practicing.

Baseball	4 h
Soccer	3 h
Soccer	5.5 h
Football	7 h
Lacrosse	6 h
Football	5 h
Baseball	4 h
Baseball	6.5 h
Soccer	6 h
Baseball	7 h

1. What proportion of students play baseball?
2. What is the mean number of hours the students spend practicing sports?
3. Murphy claims that he makes 90% of his field goal attempts. Suppose he attempts 100 field goals. Use technology to simulate 50 trials with 100 field goals each. Identify the range that contains the middle 95% of results. Is his claim reasonable?

Students at a school are conducting a music study. Each of the 50 students survey 15 musicians to determine the average time, in hours, musicians practice each week. They created a histogram of the results.



4. How many students reported an average practice time of 4.7 to 6.0 hours?
5. Based on the histogram, what is a reasonable range to suggest for the population parameters?
6. The mean score on a national exam is 1,200 with a standard deviation of 230. A college states that their incoming freshmen have higher scores than the national average. In order to confirm this statement, a reporter collects a random sample of scores from 300 incoming students. He finds that their mean score is 1,300. Is the college correct?
7. Timothy says he pitches baseballs at an average speed of 60 mph, but his 50 pitches in one game averaged 53 mph. Tamira creates 100 samples of 50 pitches for a pitcher throwing at an average of 60 mph. In 95% of the samples, pitch speeds were between 52 mph and 68 mph. Based on Tamira's data, is Timothy's claim reasonable? Explain.