



11-5 Additional Practice

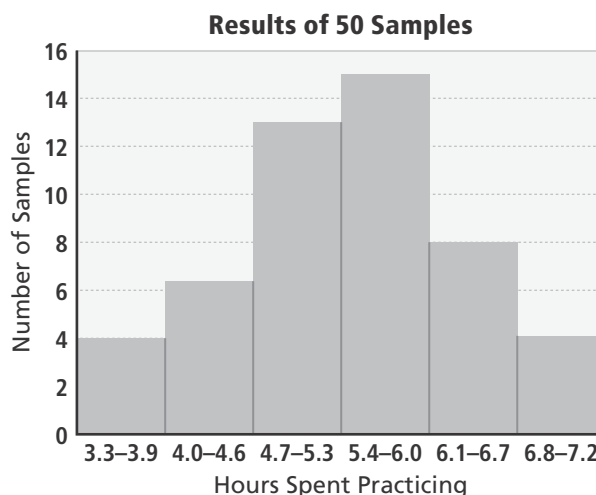
Margin of Error

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? **40%**
2. What is the mean number of hours the students spend practicing sports? **5.4 h**
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? **Answers will vary.**

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? **28**
5. Based on the histogram, what is a reasonable range to suggest for the population parameters?
4 to 6.7 h
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? **Yes. The margin of error is 26.6, so 95% of random samples of 300 students would have means between 1,173.4 and 1,226.6.**
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. **Yes, since the average from his game falls within the range of 52 to 68 mph, it is likely that Timothy's pitches average 60 mph.**