

Midterm (75 minutes)

No calculators allowed. Just set up your answers, for example, $P = 49/52$. BE SURE TO EXPLAIN YOUR REASONING. If you want extra time, you can buy time at a price of 1 point a minute; for example, if your test is handed in 10 minutes after the scheduled finish time, 10 points will be subtracted from your test score.

1. Shere Hite sent detailed questionnaires (which, according to Hite, took an average of 4.4 hours to fill out) to 100,000 women and received 4,500 replies, 98 percent saying that they were unhappy in their relationships with men. A *Washington Post-ABC News* poll telephoned 1,505 men and women and found that 93 percent of the women considered their relationships with men to be good or excellent. How would you explain this difference?

2. In each of the four cases below, which data set has the higher mean? Higher median? Higher standard deviation? Write your answers (A or B) in the table below the cases. (You don't need to do any calculations.)

a. Case 1

A	1	2	3	4	5
B	5	4	3	2	1

b. Case 2

A	1	2	3	4	5
B	1	2	3	4	6

c. Case 3

A	1	2	3	4	5
B	1	1	3	5	5

d. Case 4

A	1	2	3	4	5
B	998	999	1,000	1,001	1,002

Higher Mean Higher Median Higher Standard Deviation

Case 1
 Case 2
 Case 3
 Case 4

3. The father of a Little League baseball player told his son to lend his baseball bat to a poor hitter "to use up the bat's outs." Explain why you either agree or disagree.

8. Which is more likely to be normally distributed: the number of heads obtained when 2 coins are flipped 1000 times or the number of tails obtained when 10 coins are flipped 100 times?

9. At the Pomona College faculty-trustee retreat a few days ago, a representative of the Getty Museum boasted that their internship program, which provides full-time summer jobs at the museum, was increasing the number of students choosing careers at museums and other nonprofit visual arts institutions: “43 percent of our former interns are now working at museums and other nonprofit visual arts institutions.” Why does this statistic not necessarily prove their conclusion?

10. Historical data on the price of a box seat at Yankee Stadium were used to create the figure below, which shows that ticket prices slowed down during the years 1995 to 2010. What would you, as a statistician, say?

