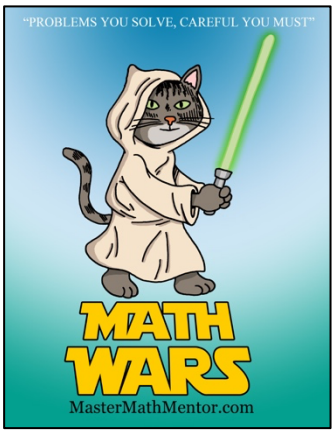
Math Wars – SAT/ACT
Topic 523 – Data Collection / Conclusions



Maximum Time: 7 Minutes

Directions: To start, you need to download the Math Wars application on your cell phone: Use the QR code or the url: https://mastermathmentor.com/mmm/mathwars.ashx?key=523

When ready, start the timer and then solve the problems below, entering your choice, A, B, C, D and pressing Submit for each problem when you are sure of your answer. When complete, stop the timer. You will see problems you got correct in green and incorrect in red. You will receive a score based on how many problems you got right and your time. A perfect score is all problems correct using half the maximum time or less. You can text or email your friends with your results.

1. (1 pt) A high school in Ambler, Pa is grades 9 – 12. The senior class has 250 students and of them, the 70 athletes were asked about renovating the gymnasium and 25 of them responded. Which of the following is the largest population to which the results of the survey can be applied.

   A. The 25 who responded
   B. The 70 athletes
   C. The senior class
   D. The high school

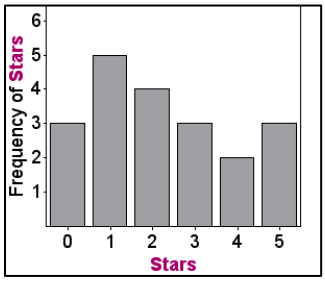
2. (3 pts) People tend to be either dog people or cat people. A survey is done to ask people "Is the easiness of having a cat worth the fact that they are not as affectionate as dogs." The survey is given outside a local ASPCA. What if anything, is wrong with this survey?

   A. The location where the survey is given.
   B. The wording of the question.
   C. More people own dogs than cats
   D. There is no problem.

3. (5 pts) In a typical month, the number of people boarding cruises at a busy cruise port is 75,000. The percent of passengers who come to the cruise port without correct documentation is 21% with an associated margin of error of 1.6%. If x is the number of people without correct documentation in a typical month, which of the following is most plausible?

   A. $15{,}000 < x < 16{,}500$ B. $14{,}500 < x < 17{,}000$ C. $x > 15{,}000$ D. $x < 17{,}000$

4. (7 pts) A survey was taken from 20 people asking them their opinion about a movie. They answer 0 stars to 5 stars. The 20 responses are summarized by the histogram to the right. Arrange the calculations in order from highest to lowest.



   A. mean > median > mode
   B. median > mean > mode
   C. mode > mean > median
   D. mode > median > mean

5. (9 pts) A class of 25 students is set up with 5 rows and 5 columns. The teacher is interested in the average number of absences in the class. She takes a sample of 5 students, checks their attendance record, and projects the results to the entire class of students. The pictures below represent 3 different sampling techniques. Using the most appropriate choice, what is the projected class average for absences.

I.

10	8	5	4	1

II.

		0		
7				
	12		3	
				1

III.

				13
			9	
		6		
	1			
4				

A. 4.6 B. 5.6 C. 5.75 D. 6.6