

Full name _____ SUNet ID (the part before @stanford.edu) _____ Section (e.g., TUES 9:30) _____

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PSYCH 10 • Fall 2026 • Worksheet for Lecture 5: The mean as a model

Warm-up. In 1535, a German surveyor's manual gave this recipe for the rod, the unit used to measure fields. Stop sixteen men as they come out of church, tall ones and short ones, and have them line up their left feet toe to heel. That length is the rod, and one sixteenth of it is a foot. **Why sixteen men instead of one? And what kind of error would remain in a rod made from sixteen feet?**

Part 1 • Seven salaries

Here are the salaries of the seven teachers at one school, in thousands of dollars: **32, 35, 38, 41, 44, 52, 94.**

- Find the median and the mean. (The mean is a whole number.)
- Suppose the teachers' union and the school's budget office each want to report one number as the typical salary at this school. Which number would each of them pick, and why?
- For each teacher, compute the deviation from the mean (the salary minus the mean), keeping the sign. Then add up all seven deviations.
- Now suppose someone proposed 45 as the model instead of the mean. Compute the seven deviations from 45 and add them up. How is this sum related to the distance between 45 and the mean? Use that relationship to predict what the sum of the deviations from 50 would be, without computing them.
- (If you have time.) The teacher who earns 94 leaves, and a new teacher who earns 31 is hired. Write the seven new salaries in order, then find the new median and the new mean. Which one changed more, and why?

a. _____

b. _____

c. _____

d. _____

e. _____

Part 2 • Seven averages

Each of the statements below uses an average. Next to each one, write **A** if the average is a useful summary, **B** if it is a number you can compute but one that is easy to misread, or **C** if it is not meaningful.

1. ____ The average American household has 2.5 people.
2. ____ My roommate got home at 11 pm, midnight, and 1 am this week, so on average they got home at 8 am.
3. ____ The average zip code of the students in this class is 94305.
4. ____ A restaurant's average rating on Yelp is 4.2 stars.
5. ____ The average adult has fewer than two legs.
6. ____ The center of the US population, the average location of all 330 million residents, is in Missouri.
7. ____ You drove to a friend's place at 30 mph and back along the same road at 60 mph, so your average speed for the round trip was 45 mph.

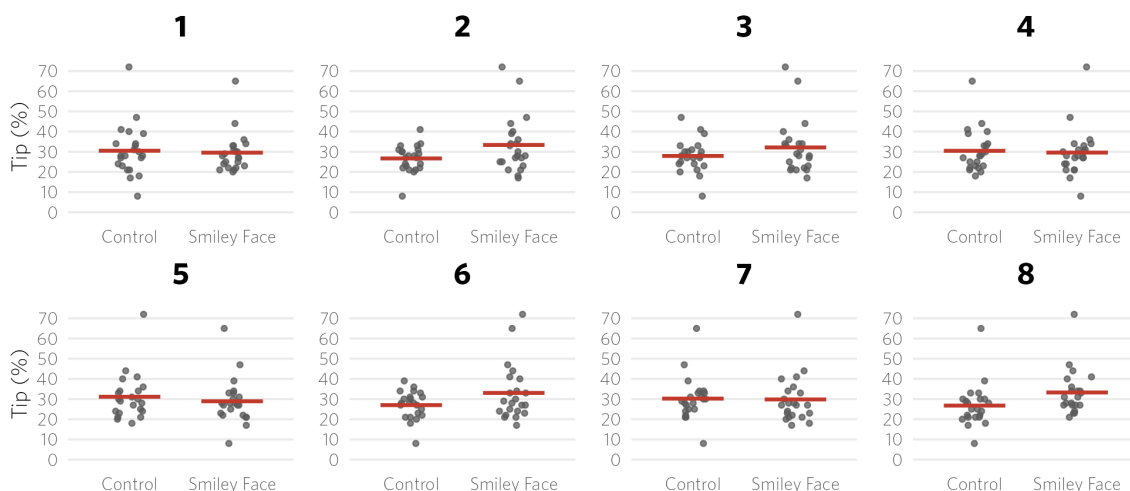
a. Pick one of the statements you marked B or C. In one sentence, say what goes wrong and what you would report instead.

b. Give one example of your own of an average of something that isn't a number, and say what that average would be good for.

a. _____

b. _____

Part 3 • Which one is real?



One of these eight plots shows the real data from the tipping experiment: 44 restaurant tables, 22 of which got a check with a smiley face drawn on it and 22 of which (labeled Control) got a plain check. The thick bar in each group is the group's mean tip. In the other seven plots, the same 44 tips were reassigned to the two groups at random.

a. Circle the number of the plot you think is the real one.

b. In one sentence, explain what made you pick that plot.

b. _____

Something new you learned today: _____