Discussion Questions 3
Psychology 2101

1. Assume the scores in the table below are inherently discrete, so that there is no round-off.
Compute the mean from the frequency distribution. What is the median? Fill in the cumulative
frequencies, relative frequencies, and cumulative relative frequencies.

| X | f | cum.f | rel.f | cum.rel.f |
|---|---|-------|-------|-----------|
| 20 | 5 | | | |
| 19 | 6 | | | |
| 18 | 3 | | | |
| 17 | 5 | | | |
| 16 | 1 | | | |

2. An NCAA brochure says that the graduation rate at a college is 80% for 125 student-athletes,
and it is 94% overall for the total of all 1000 students at the college. What is the graduation rate
for students who are not athletes? Why do you think the NCAA does not print this latter figure
in its brochure? Professor Steiger gave a formula for the mean of two combined groups in class.
How does the formula he gave relate to this problem?

3. Consider the following plot, which shows the probability density plot for the chi-square
distribution with 4 degrees of freedom.

a) Is the distribution positively or negatively skewed?
b) There are 3 vertical lines. Label the mean, median and mode. Justify your choice.
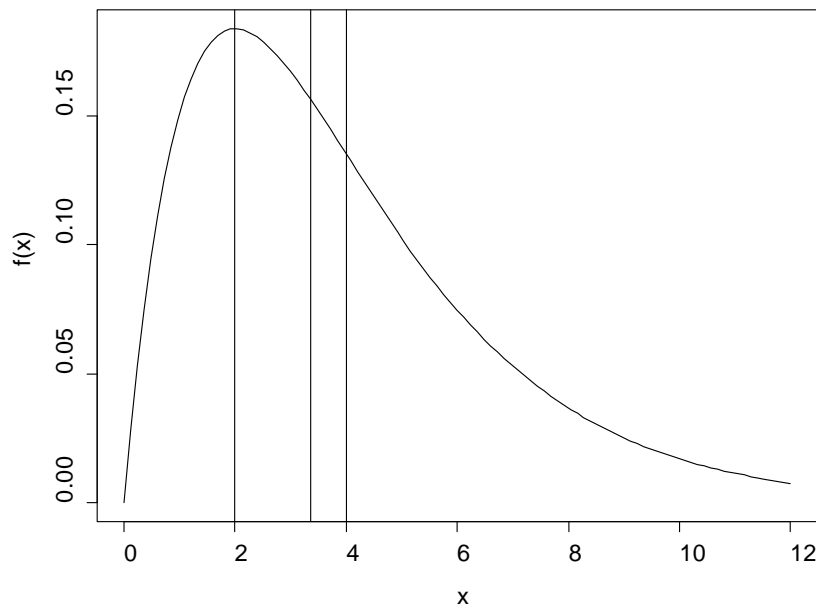
4. You have a set of scores in a variable $X$ with a mean of 10 and a median of 8. What will the mean and median change to if you rescale the $X$'s into $Y$'s via the formula

$$Y = 2.2X - 4$$

5. You are running a cognitive psychology experiment with a task that demands very quick reaction time from your participants. Unfortunately, periodically but infrequently there are loud noises in the hallway outside your lab that you have no control over. These distract the participant and cause a comparatively very high reaction time on the particular trials when the noice occurred. The study seeks to compare the typical reaction time of participants in two conditions. Which measure of central tendency would be more appropriate, the mean or the median? Why?