

**Instructions:** Show all work. Use exact answers unless specifically asked to round. Explain thoroughly using complete sentences.

1. For her dissertation, Maris needs to estimate the average number of hours per week that children aged 10-12 spend watching TV. She randomly surveys 250 schoolchildren in her area who are between 10 and 12 years old and calculates an average of 17.4 hours of TV per week.
  - a. In what context is 17.4 a descriptive statistic?

*this is the statistic she calculated on her sample of 250 10-12 year olds*

- b. In what context is 17.4 an inferential statistic?

*if she uses it to infer what all 10-12 year olds do*

2. Classify the following variables. Check all the appropriate boxes that apply.

Variable	Qualitative	Quantitative	Discrete	Continuous	Nominal	Ordinal	Interval	Ratio
Score on an exam in percent		✓		✓				✓
Number of students in a class		✓	✓					✓
Heights of students		✓		✓				✓
Race of students	✓				✓			
Birth order of a child in a family	✓					✓		
Letter grades on a test	✓					✓		
Age of students in a class		✓	<del>✓</del>	<del>✓</del>				✓
Money in a college fund		✓		✓				✓
Schools in the county (names)	✓				✓			
GPA of students in a class		✓		✓			✓	

3. A study is conducted analyzing whether students bused from the inner city to a suburban school for a year showed an improvement in their test scores. Describe a confounding variable that should be considered by the study.

*answers will vary but could include:*  
*time spent on bus (not studying).*  
*home environment (family or neighborhood) not changed.*  
*previous schooling in old environment (may be behind)*  
*others*

4. Why is it important that any study involving children be reviewed by an institutional review board? How can "informed consent" be satisfied in this case?

IRBs are to protect subjects from harm, so we should take special care w/ studies of kids

informed consent can be gotten from the parents

5. Give an example of a kind of bias and describe how it can affect the interpretation of the results of a study.

answers will vary.

nonresponse bias, for instance, can impact responses to a survey of students/parents in the community, particularly if conducted outside of school hours.

You might get only responses from people w/ especially strong feelings.

Other responses may be possible