

9.14 Statistical Investigations, Sampling, and Bias

Chapter 9: Statistics and Data Analysis

Name: _____

Date: _____

Class/Period: _____

Problem 9.209 A school wants to study lunch satisfaction. Identify the population if the goal is to describe all students, then describe one possible sample.

Problem 9.212 An online poll is answered only by volunteers who click a link. Explain why volunteers may differ from people who ignore it.

Problem 9.210 A survey includes 50 students selected from a complete roster. Explain what makes the 50 students a sample rather than the population.

Problem 9.213 Rewrite "Don't you agree that homework is excessive?" in neutral language. Explain which word made the original leading.

Problem 9.211 A researcher estimates schoolwide height using only basketball players. Predict the direction of bias and explain the missing groups.

Problem 9.214 Describe a simple random-sampling method using numbered names from a class roster.

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Problem 9.215 A scale adds 2 pounds to every backpack measurement. Identify the source of bias and predict its direction.

Problem 9.218 A numerical sample is strongly skewed. Choose center and spread measures for the report and explain your pairing.

Problem 9.216 Explain why a conclusion should name the sample rather than pretending the entire population was measured.

Problem 9.219 Scores 80 and 90 have weights 1 and 3. Find the weighted mean and explain why 90 has greater influence.

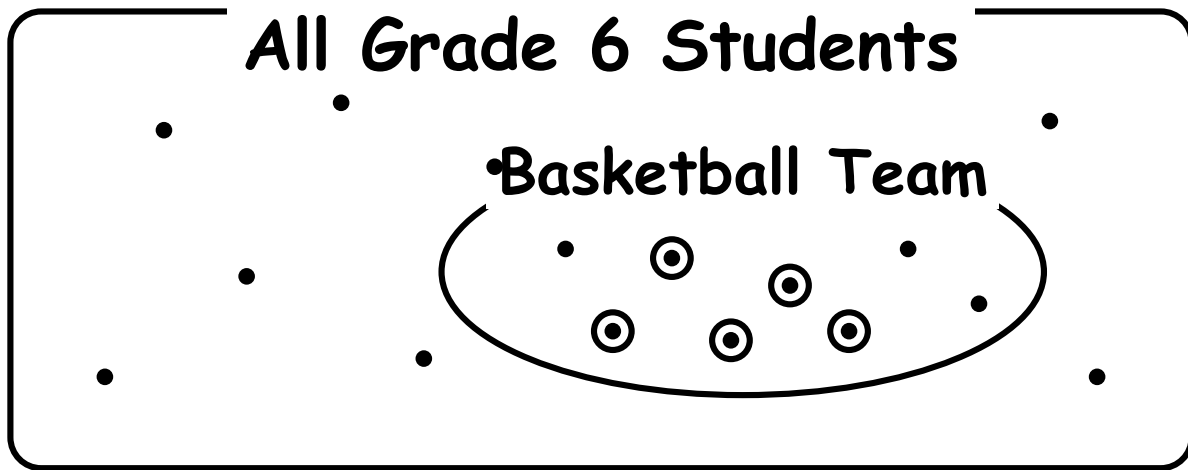
Problem 9.217 Choose a display for categorical survey responses and justify the choice.

Problem 9.220 Two variables rise together in an observational study. Explain why the association alone does not prove one causes the other.

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Problem 9.221 Study the sampling plan.



Circled students are selected for the sample.

Identify the population and sample. Explain why selecting only circled basketball players may bias an estimate of Grade 6 height.

Problem 9.222 Would circling 50 basketball players instead of 5 remove the bias in the diagram? Explain why sample design can matter more than sample size.

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Problem 9.223 Design a fair investigation of backpack weights among Grade 6 students. State the question, sampling method, display, center, spread, and one possible source of bias.

Problem 9.224 A course grade is 40 percent tests, 35 percent projects, and 25 percent homework. A student earns 82, 94, and 88. Find the weighted mean and explain the formula in kid-friendly language.