NAME _____ DATE _____ PERIOD _____

8-7 Study Guide and Intervention

Using Data to Predict

Data gathered by surveying a random sample of the population may be used to make predictions about the entire population.

Example 1 **In a survey, 200 people from a town were asked if they thought the town needed more bicycle paths. The results are shown in the table. Predict how many of the 28,000 people in the town think more bicycle paths are needed.**

More Bicycle Paths Needed?	
Response	**Percent**
yes	39%
no	42%
undecided	19%

Use the percent proportion.

$$\frac{part}{whole} = \frac{percent}{100}$$ Percent proportion

part of the population → $\frac{n}{28{,}000} = \frac{39}{100}$ Let n represent the number. Survey results: 39% = $\frac{39}{100}$

Whole population → $100n = 38{,}000(39)$ Cross products

$n = 10{,}920$ Simplify.

So, about 10,920 people in the town think more bicycle paths are needed.

Exercises

1. **VOTES** In a survey of voters in Binghamton, 55% of those surveyed said they would vote for Armas for city council. If 24,000 people vote in the election, about how many will vote for Armas? **13,200 people**

2. **LUNCH** A survey shows that 43% of high school and middle school students buy school lunches. If a school district has 2,900 high school and middle school students, about how many buy school lunches? **1,247 students**

3. **CLASS TRIP** Students of a seventh grade class were surveyed to find out how much they would be willing to pay to go on a class trip. 24% of the students surveyed said they would pay \$21 to \$30. If there are 360 students in the seventh grade class, about how many would be willing to pay for a trip that cost \$21 to \$30? **about 86 students**

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