

Name .....

Lesson 9

Problem Solving:  
Reasonable  
Answers

Homework Helper



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Is it reasonable to say that about 3,000 students participated in the survey?

Career Survey

Scientist	2,129 votes
Writer	1,093 votes
Doctor	1,076 votes

1 Understand

What facts do you know?

2,129 students voted for scientist, 1,093 students voted for writer, and 1,076 students voted for doctor.

What do you need to find?

If 3,000 is a reasonable total for all the votes.

2 Plan Estimate the sum. Then, compare the estimate to 3,000.

$$\begin{array}{r} 2,129 \longrightarrow 2,100 \\ 1,093 \longrightarrow 1,100 \\ + 1,076 \longrightarrow + 1,100 \\ \hline 4,300 \end{array}$$

The estimated sum of 4,300 is not close to 3,000. So, 3,000 is not a reasonable total for all the votes.

4 Check Does your answer make sense? Explain.

Yes;  $2,129 + 1,093 + 1,076$  is 4,298, which is not close to the suggested total of 3,000. 3,000 is not a reasonable total.



## Problem Solving Sample explanations: 1–3, 5

Determine a reasonable answer for each problem.

1. Students have borrowed 632 fiction books and 392 non-fiction books from the school library. Is it reasonable to say the students borrowed about 1,000 books? Explain.

**Yes; I estimated  $600 + 400 = 1,000$ .**


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2. Some students from Sydney Elementary have entered a National Poetry contest. There are 19 second graders, 23 third graders, and 9 fourth graders who have entered. Are there at least 50 students entered in the contest? Explain.

**Yes; 51 students have entered**

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### Brain Builders

3. **Mathematical PRACTICE**  **Reason** The head of Gracie's favorite dinosaur is 14 feet long, the body is 26 feet long, and the tail is 19 feet long. Is it reasonable to say the entire dinosaur is 60 feet long? Explain.

**Yes; the sum of the addends is 59 feet.**

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Use the table to solve Exercises 4 and 5.

Radio Stations	
Country	3,589 listeners
Rock	2,986 listeners
Hip Hop	3,472 listeners

4. How many people listen to country and hip hop? What role did place value play in finding the sum?

**7,061 listeners; I added digits with the same place value.**

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5. The goal for the rock and country stations was to have 7,000 listeners. Is it reasonable to say that the stations reached their goal? Explain.

**Sample answer: No;  $3,600 + 3,000 = 6,600$ ,**

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**which is much less than 7,000.**

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