Name

Problem Solving: Writing to Explain

Explain your solution. Show your work. Sample answers given.

1. A fundraiser is being held to raise money for a new school playground. Of every $20 raised, $16 will be spent on playground equipment. If the goal of the fundraiser is $320.00 for playground equipment, how much total money will it need to raise?

*Use Algebra:* I set up a proportion and then used multiplication to solve for the variable.

\[
\frac{\$20 \text{ raised}}{\$16 \text{ playground equipment}} = \frac{x \text{ amount raised}}{\$320 \text{ playground equipment}}
\]

\[
\frac{20 \times 20}{16 \times 20} = \frac{400}{320} \quad ; \quad x = 400.
\]

The fundraiser will need to raise a total of $400.

2. Stephan is planning a hiking trip at Kings Canyon National Park. He plans to hike 14 miles every 2 days. If he hikes 42 miles, how many days will he hike?

*Use Number Sense:* I multiplied 14 miles by 3 to get 42 miles, so I multiplied 2 days by 3 to get 6 days. Then I set up a proportion to see if the ratios were equal:

\[
\frac{14 \text{ miles}}{2 \text{ days}} = \frac{42 \text{ miles}}{6 \text{ days}}
\]

He will hike 6 days if he hikes 42 miles.

3. A rental store at the beach has 56 umbrellas and 24 surfboards. Which ratio describes the relationship of surfboards to umbrellas?

A 56:24  B 7:3  C 3:8  D 3:7

4. Writing to Explain Kara can run 3 miles in 25.5 minutes. At this rate, how long would it take her to run 2 miles? Diana’s answer: If I subtract 1 mile from 3 miles, I get 2 miles, so if I subtract 1 minute from 25.5 minutes, I get 24.5 minutes. Kara takes 24.5 minutes to run 2 miles. Is Diana’s answer correct? Explain.

*No; Sample answer:* Find the unit rate by dividing 25.5 by 3 to get 8.5 mi per min. Then multiply the unit rate by 2 to find the time that it takes Kara to run 2 mi. \(8.5 \times 2 = 17\), so it takes Kara 17 min. to run 2 mi.