Problem Solving: Reasonable Answers

**Example 1** Sometimes answers are unreasonable because the problem is misinterpreted.

Martha has \(4 \frac{1}{2}\) cups of flour. She uses \(\frac{1}{4}\) cup in each batch of cookies. How many batches of cookies can she make?

*Martha thinks she can make 4 batches of cookies.*

Her answer is unreasonable. If she uses \(\frac{1}{4}\) cup in each batch, she will be able to make many more than 4 batches.

**Example 2** Sometimes an answer does not make sense.

Mrs. Barrett is stacking workbooks on her shelf. The shelf is \(22 \frac{1}{4}\) inches long, and each workbook is \(\frac{3}{4}\) inch thick. How many workbooks will fit on the shelf?

*Harvey thinks she will fit 29 \(\frac{2}{3}\) workbooks on the shelf.*

His answer is unreasonable because there cannot be \(\frac{2}{3}\) of a workbook.

Tell whether each underlined statement is reasonable or unreasonable. Explain your answer and then solve. Show your work.

1. Elizabeth uses \(\frac{4}{5}\) of a pound of spaghetti in her recipe. She divides the spaghetti evenly among 8 dinner guests. That means she gives \(\frac{1}{5}\) pound to each guest.

2. Tom buys a piece of fabric 3 yards long. He only needs \(\frac{5}{6}\) of the fabric. So, he needs \(2 \frac{1}{2}\) yards.

**Writing Math** Explain one way you can tell that an answer is unreasonable.