Lesson 2.1

Problem Solving

Use the table for 17–19.

17. Members of the Ozark Trail Hiking Club hiked a steep section of the trail in June and July. The table shows the distances club members hiked in miles. Write Maria's July distance as a decimal.
   
   2.625 miles

18. Write Kelsey's June hiking distance as a fraction or mixed number in simplest form.
   
   3 $\frac{3}{20}$ miles

19. How much farther did Zoey hike in July than in June?
   Explain how you found your answer.
   
   0.525 mile; $\frac{3}{6} = 3.75$ because $\frac{3}{6} = 0.375$ and
   
   $3 + 0.375 = 3.75$. Subtract $3.75 - 2.85 = 0.525$.

20. What's the Error? Tabitha's hiking distance in July was $2\frac{1}{9}$ miles. She wrote the distance as 2.16 miles. What error did she make?

   Tabitha drew the bar over both digits to the right of the decimal point instead of just the digit that repeats. The correct answer is 2.16.

21. Write each fraction as a decimal. What pattern do you see? Use the pattern to predict the decimal form of $\frac{7}{9}$ and $\frac{5}{9}$.

   $\frac{4}{9} = 0.4, \frac{5}{9} = 0.5, \frac{6}{9} = 0.6$; The decimal repeats, and the numerator of the fraction is the repeating digit. $\frac{7}{9} = 0.7, \frac{8}{9} = 0.8$

22. Test Prep Winona's measuring cup is $\frac{3}{5}$ full of water. What is this amount as a decimal?

   A. 0.6        C. 0.62
   B. 0.6        D. 0.62
Lesson 2.2

Problem Solving REAL WORLD

Use the table for 15–19.

15. In one week, Altoona, PA, and Bethlehem, PA, received snowfall every day, Monday through Friday. On which days did Altoona receive more snowfall than Bethlehem?

Tuesday, Wednesday, and Friday

16. What if Altoona received an additional 0.3 inch of snow on Thursday? How would the total amount of snow in Altoona compare to the amount received in Bethlehem that day?

\[ 4 \frac{3}{5} + 0.3 = 4 \frac{9}{10} \text{ or } 4.9 \text{ in. which is greater than } 4.8 \text{ in.} \]

17. Explain two ways you could compare the snowfall amounts in Altoona and Bethlehem on Monday.

Use division to change the snowfall amount in Altoona to a decimal. \( 2 \frac{1}{4} = 2.25 \) and \( 2.25 < 2.6 \). Compare each fraction and decimal to \( \frac{1}{2}, \frac{1}{4}, \frac{1}{2} < \frac{1}{4} \) and \( 0.6 > \frac{1}{2} \), so \( 2.6 > 2 \frac{1}{4} \).

18. Explain how you could compare the snowfall amounts in Altoona on Thursday and Friday.

Three of four equal parts is greater than three of five equal parts, so Altoona received more snow on Friday.

19. Test Prep The snowfall amounts recorded in inches in Reading, PA, on Monday through Friday during the same week were \( 2 \frac{3}{5}, 3 \frac{1}{2}, 2 \frac{3}{4}, 4 \frac{5}{10}, \) and \( 2 \frac{7}{10} \). List the three cities in order of amount of snowfall received on Wednesday from least to greatest.

A. Reading, Altoona, Bethlehem
B. Bethlehem, Reading, Altoona
C. Bethlehem, Altoona, Reading
D. Reading, Bethlehem, Altoona
Changing Recipes
You can make a lot of recipes more healthful by reducing the amounts of fat, sugar, and salt.

Kelly has a recipe for muffins that calls for $1\frac{1}{2}$ cups of sugar. She wants to use $\frac{1}{2}$ that amount of sugar and more cinnamon and vanilla. How much sugar will she use?

Find $\frac{1}{2}$ of $1\frac{1}{2}$ cups to find what part of the original amount of sugar to use.

\[
\frac{1}{2} \times 1\frac{1}{2} = \frac{1}{2} \times \frac{3}{2}
\]

Multiply.

\[
= \frac{3}{4}
\]

So, Kelly will use $\frac{3}{4}$ cup of sugar.

19. Michelle has a recipe that calls for $2\frac{1}{2}$ cups of vegetable oil. She wants to use $\frac{3}{4}$ that amount of oil and use applesauce to replace the rest. How much vegetable oil will she use?

\[
1\frac{2}{3} \text{ cups}
\]

20. Tony's recipe for soup calls for $1\frac{1}{3}$ teaspoons of salt. He wants to use $\frac{1}{2}$ that amount. How much salt will he use?

\[
\frac{5}{6} \text{ teaspoon}
\]

21. Jeffrey's recipe for oatmeal muffins calls for $2\frac{1}{3}$ cups of oatmeal and makes one dozen muffins. If he makes $1\frac{1}{2}$ dozen muffins for a club meeting, how much oatmeal will he use?

\[
3\frac{3}{8} \text{ cups}
\]

22. Cara's muffin recipe calls for $1\frac{1}{2}$ cups of flour for the muffins and $\frac{1}{3}$ cup of flour for the topping. If she makes $\frac{1}{2}$ of the original recipe, how much flour will she use for the muffins and topping?

\[
\frac{7}{8} \text{ cup}
\]
Lesson 2.4

Problem Solving

14. Three students each popped \( \frac{3}{4} \) cup of popcorn kernels. The table shows the fraction of each student’s kernels that did not pop. Which student had \( \frac{1}{16} \) cup unpopped kernels?

![Image of popcorn]

15. A recipe calls for 4 quarts popcorn and \( \frac{1}{3} \) cup grated parmesan cheese. If you wanted to make \( \frac{3}{4} \) of the recipe, how much popcorn and cheese would you need?

**3 qt popcorn and \( \frac{1}{4} \) cup cheese**

16. The jogging track at Francine’s school is \( \frac{3}{4} \) mile long. Yesterday Francine completed two laps on the track. If she ran \( \frac{3}{4} \) of the distance and walked the remainder of the way, how far did she walk?

**1 mile**

17. Sense or Nonsense? At a snack store, \( \frac{7}{12} \) of the customers bought pretzels and \( \frac{3}{10} \) of those customers bought low-salt pretzels. Bill states that \( \frac{7}{30} \) of the customers bought low-salt pretzels. Is Bill’s statement sense or nonsense? Explain.

**Nonsense; possible explanation: When multiplying \( \frac{7}{12} \times \frac{3}{10} \), Bill divided 12 by 3 and got 3 instead of 4.**

18. Test Prep Mandy has a \( \frac{3}{4} \)-pound bag of blueberries. She uses \( \frac{1}{10} \) of the bag to make pancakes for her friends. How many pounds of blueberries does Mandy use for the pancakes?

- **A 3/16 pound**
- **B 4/9 pound**
- **C 2/5 pound**
- **D 3/4 pound**