1. Mrs. Williams is organizing her office supplies. There are 3 open boxes of paper clips in her desk drawer. Each box has \(\frac{7}{8}\) of the paper clips remaining. How many boxes of paper clips are left? Shade the model and complete the calculations below to show how you found your answer.

\[3 \times \frac{7}{8} = \frac{21}{8} = \frac{\text{number of full boxes}}{8}\]

2. Diana worked on her science project for \(5\frac{1}{3}\) hours. Gabe worked on his science project \(1\frac{1}{4}\) times as long as Diana. Paula worked on her science project \(\frac{3}{4}\) times as long as Diana. For 2a–2d, select True or False for each statement.

2a. Diana worked longer on her science project than Gabe worked on his science project.  

2b. Paula worked less on her science project than Diana worked on her science project.

2c. Gabe worked longer on his science project than Paula worked on her science project.

2d. Gabe worked longer on his science project than Diana and Paula combined.

3. Louis wants to carpet the rectangular floor of his basement. The basement has an area of 864 square feet. The width of the basement is \(\frac{2}{3}\) its length. What is the length of Louis’s basement?

\(\text{Length} = \frac{3}{2} \times 864 = \text{feet}\)
4. Frannie put \( \frac{2}{3} \) of her music collection on an mp3 player. While on vacation, she listened to \( \frac{3}{5} \) of the music on the player. How much of Frannie’s music collection did she listen to while on vacation? For 4a–4d, choose the correct values to describe how to solve the problem.

4a. Draw a rectangular array with 3 rows and 4 columns.

4b. Shade \( \frac{1}{3} \) of the rows gray.

4c. Shade \( \frac{3}{5} \) of the gray squares black.

4d. Frannie listened to \( \frac{3}{10} \) of her music collection while on vacation.

5. Logan bought 15 balloons. Four-fifths of the balloons are purple. How many of the balloons are purple? Draw a model to show how you found your answer.

6. Kayla walks \( 3\frac{2}{5} \) miles each day. Which of the following statements correctly describe how far she walks? Mark all that apply.

A. Kayla walks \( 14\frac{2}{5} \) miles in 4 days.
B. Kayla walks \( 23\frac{4}{5} \) miles in 7 days.
C. Kayla walks 34 miles in 10 days.
D. Kayla walks \( 102\frac{2}{5} \) miles in 31 days.
7. Write each multiplication expression in the correct box.

\[
\frac{4}{5} \times 1 \frac{1}{8} \quad \frac{1}{2} \times \frac{4}{5} \quad 3 \times \frac{4}{5} \quad \frac{4}{5} \times \frac{4}{5} \quad \frac{8}{8} \times \frac{4}{5} \quad \frac{4}{5} \times \frac{2}{2}
\]

Product is equal to \(\frac{4}{5}\).

Product is greater than \(\frac{4}{5}\).

Product is less than \(\frac{4}{5}\).

8. A postcard has an area of 24 square inches. Two enlargements of the postcard have areas of 54 square inches and 96 square inches. In each postcard, the length is \(1 \frac{1}{2}\) times the width. Which of the following could be the dimensions of the postcard or one of the enlargements? Mark all that apply.

A 6 inches by 9 inches
B 10 inches by 15 inches
C 8 inches by 12 inches
D 6 inches by 12 inches
E 4 inches by 6 inches

9. In a fifth grade class, \(\frac{4}{5}\) of the girls have brown hair. Of the brown-haired girls, \(\frac{3}{4}\) of them have long hair. Of the girls with long brown hair, \(\frac{1}{3}\) of them have green eyes.

Part A
What fraction of the girls in the class have long brown hair?

\[\underline{\quad} \text{of the girls}\]

Part B
What fraction of the girls in the class have long brown hair and green eyes? Explain how you found your answer.

\[\underline{\quad} \text{of the girls}\]
10. **THINK SMARTER** Caleb's family room has the dimensions shown. He needs to find the area of the room so that he knows how much carpet to buy. Complete the area model below to find the area of the family room.

![Area Model Diagram]

$$\text{area of the room} = \boxed{\phantom{0000}} \text{ square yards}$$

11. Doreen lives $\frac{3}{4}$ mile from the library. Sheila lives $\frac{1}{3}$ as far away from the library as Doreen. For 11a–11c, choose Yes or No to answer each question.

11a. Does Doreen live farther from the library than Sheila? ○ Yes ○ No

11b. Does Sheila live $\frac{1}{4}$ mile from the library? ○ Yes ○ No

11c. Does Sheila live twice as far from the library than Doreen? ○ Yes ○ No

12. Taniqua took a test that had 20 multiple-choice questions and 10 True/False questions. She got $\frac{9}{10}$ of the multiple-choice questions correct, and she got $\frac{4}{5}$ of the True/False questions correct.

12a. How many multiple-choice questions did Taniqua get correct?

$$\boxed{\phantom{000}} \text{ multiple-choice questions}$$

12b. How many True/False questions did Taniqua get correct?

$$\boxed{\phantom{0000}} \text{ True/False questions}$$
13. The table shows how many hours some of the part-time employees at the toy store worked last week.

<table>
<thead>
<tr>
<th>Name</th>
<th>Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conrad</td>
<td>6 $\frac{2}{3}$</td>
</tr>
<tr>
<td>Giovanni</td>
<td>9 $\frac{1}{2}$</td>
</tr>
<tr>
<td>Sally</td>
<td>10 $\frac{3}{4}$</td>
</tr>
</tbody>
</table>

This week, Conrad will work 1 $\frac{3}{4}$ times as long as last week. Giovanni will work 1 $\frac{1}{3}$ times as long as last week. Sally will work $\frac{2}{3}$ the number of hours she worked last week. Match each employee’s name to the number of hours he or she will work this week.

<table>
<thead>
<tr>
<th>Employee</th>
<th>Hours This Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conrad</td>
<td>7 $\frac{1}{6}$</td>
</tr>
<tr>
<td>Giovanni</td>
<td>12 $\frac{2}{3}$</td>
</tr>
<tr>
<td>Sally</td>
<td>11 $\frac{2}{3}$</td>
</tr>
</tbody>
</table>

14. Peggy is making a quilt using panels that are $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. The quilt is 5 $\frac{1}{2}$ feet long and 4 feet wide.

**Part A**

Let each square of the grid below represent $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. Draw a rectangle on the grid to represent the quilt.

![Grid with a rectangle drawn]

**Part B**

What is the area of the quilt? Explain how you found your answer.

_______ square feet
15. Ruby conducted a survey and found that $\frac{5}{6}$ of her classmates have a pet and $\frac{2}{3}$ of those pets are dogs. What fraction of her classmates has dogs? Write a number from the number tiles in each box to complete the calculations shown below. You may use numbers more than once or not at all.

$$\frac{5}{6} \times \frac{2}{3} = \frac{5 \times 2}{6 \times 3} = \frac{10}{18} = \frac{5}{9}$$

$\phantom{\frac{5}{9}}$ of her classmates

16. Robbie is using the recipe below to make chicken noodle soup. He plans to make 6 batches of the soup. He has $\frac{2}{3}$ teaspoon of black pepper.

**Chicken Noodle Soup**

- 4 cups chicken broth
- 1 medium carrot, sliced
- 1 stalk celery, sliced
- $\frac{1}{2}$ cup uncooked egg noodles
- $\frac{1}{8}$ teaspoon ground black pepper
- 1 cup shredded cooked chicken

**Part A**

Write an expression that Robbie can use to determine how much black pepper is needed for 6 batches.

**Part B**

Draw a model to show how Robbie can find the product from Part A.

**Part C**

Does Robbie have enough black pepper for 6 batches of the soup? Explain your reasoning.