2.R.3 Exercises

Concept Check

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. The rules for order of operations are the same for fractions, mixed numbers, and whole numbers.

2. According to the rules for order of operations, multiplication occurs before division.

3. The mean is found by adding all the numbers in the set and then dividing by the quantity of numbers in the set.

Practice

For each pair of fractions, determine which fraction is larger and by how much it is larger.

4. $\frac{2}{3}, \frac{3}{4}$

5. $\frac{4}{5}, \frac{17}{20}$

6. Arrange $\frac{2}{3}, \frac{3}{4}, \frac{5}{8}$ in order from smallest to largest. Then find the difference between the largest and smallest fractions.

Simplify.

7. $\frac{1}{2} \div \frac{7}{8} + \frac{1}{7} \cdot \frac{2}{3}$

8. $\frac{1}{2} \div \frac{2}{3} + \left(\frac{1}{3}\right)^2$

9. Find the average of the numbers $\frac{5}{6}, \frac{1}{15}$, and $\frac{17}{30}$.

Applications

Solve.

10. ***Painting:*** Two painters paint $76\frac{1}{2}$ feet of fencing in one day. The first painter contributes $2\frac{1}{2}$ hours and the second works for $5\frac{3}{5}$ hours. How many feet of fencing are painted in each hour? (**Hint:** Add the number of hours then divide the length of fencing by this sum.)

11. ***Books:*** An art book has 40 two-sided pages of pictures, each of which is $\frac{1}{32}$ inch thick. Each two-sided page is protected by a $\frac{1}{80}$ inch thick piece of paper. Each side of the book is bound by a $\frac{1}{6}$ inch cover. What is the total thickness of the book?

12. ***Statistical Survey:*** Jade spoke to students on campus and found that $\frac{3}{11}$ of the students surveyed are freshmen and $\frac{3}{8}$ of the students surveyed are sophomores. Did Jade survey more freshmen or sophomores?

13. ***Marketing:*** A marketing team set up a booth in a grocery store and asked 150 shoppers to taste samples of potato chips and select their favorite. The Good Foods Company that hired the marketing team produced the chips in Sample A and Sample B. The chips in Sample C and Sample D are competitor products. The marketing team results are below. How many shoppers chose one of the Good Foods Company potato chips?

Sample	Shoppers Favorite
A	26%
B	22%
C	32%
D	20%

Writing & Thinking

14. **a.** If two fractions are between 0 and 1, can their sum be more than 1? Explain.

b. If two fractions are between 0 and 1, can their product be more than 1? Explain.