

# Word Problems: Adding and Subtracting Fractions

Grade 5 Math • Section 4.6

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 10

## Quick Review and Helpful Hints

**Key strategy:** Read the problem, identify the fractions, decide whether to add or subtract, find a common denominator, compute, and simplify.

Look for clue words: “total,” “combined,” “altogether” (add); “difference,” “remaining,” “how much more” (subtract).

Always check: does my answer make sense in context?

**Example:** Mia walks  $\frac{3}{4}$  mile to school and  $\frac{2}{5}$  mile to the library after school. How far does she walk in total?

LCD of 4 and 5 is 20.  $\frac{3}{4} = \frac{15}{20}$ ,  $\frac{2}{5} = \frac{8}{20}$ .  $\frac{15}{20} + \frac{8}{20} = \frac{23}{20} = 1\frac{3}{20}$  miles.

**Answer:**  $1\frac{3}{20}$  miles

## Practice Problems

Solve each word problem. Show your work.

- Tom mixes  $\frac{2}{3}$  cup of red paint with  $\frac{5}{8}$  cup of blue paint. How much paint does he have? \_\_\_\_\_
- A rope is  $4\frac{1}{2}$  feet long. Sarah cuts off  $1\frac{3}{4}$  feet. How much is left? \_\_\_\_\_
- A pizza is cut into 12 slices. Ben eats  $\frac{1}{4}$  of the pizza and Ana eats  $\frac{1}{3}$ . What fraction did they eat together? What fraction remains? \_\_\_\_\_
- Kayla practices piano for  $\frac{5}{6}$  hour on Monday and  $\frac{3}{4}$  hour on Wednesday. How much more time did she practice on Monday? \_\_\_\_\_
- A trail is  $3\frac{2}{5}$  miles long. After hiking  $1\frac{7}{10}$  miles, how far is left? \_\_\_\_\_
- A container holds  $2\frac{1}{6}$  gallons. Another holds  $3\frac{5}{8}$  gallons. What is the combined capacity? \_\_\_\_\_
- An artist uses  $\frac{5}{8}$  of a tube of paint on Monday and  $\frac{1}{4}$  on Tuesday. How much of the tube has been used? \_\_\_\_\_
- A board is  $6\frac{1}{3}$  feet long. Two pieces of  $2\frac{1}{4}$  feet and  $1\frac{5}{6}$  feet are cut from it. How much board remains? \_\_\_\_\_

## Word Problems

- A student read  $\frac{2}{5}$  of a book on Saturday and  $\frac{1}{3}$  on Sunday. What fraction of the book has been read? What fraction remains? \_\_\_\_\_
- A tank holds  $10\frac{1}{2}$  gallons of water. After  $3\frac{3}{4}$  gallons are used for washing and  $2\frac{2}{3}$  gallons for cooking, how much water remains? \_\_\_\_\_



## Answer Keys

- |  |  |
|--|--|
| <p>1. <math>1\frac{7}{24}</math> cups</p> <p>2. <math>2\frac{3}{4}</math> ft</p> <p>3. <math>\frac{7}{12}</math> eaten; <math>\frac{5}{12}</math> remains</p> <p>4. <math>\frac{1}{12}</math> hr</p> <p>5. <math>1\frac{7}{10}</math> mi</p> | <p>6. <math>5\frac{19}{24}</math> gal</p> <p>7. <math>\frac{7}{8}</math></p> <p>8. <math>2\frac{1}{4}</math> ft</p> <p>9. <math>\frac{11}{15}</math> read; <math>\frac{4}{15}</math> remains</p> <p>10. <math>4\frac{1}{12}</math> gal</p> |
|--|--|

### Step-by-Step Explanations

1. Start with the main idea. For adding and subtracting fractions,  $\frac{2}{3} + \frac{5}{8} = \frac{16}{24} + \frac{15}{24} = \frac{31}{24} = 1\frac{7}{24}$ . Fractions are easier to combine when the pieces are the same size.

2. Keep the work tidy. For adding and subtracting fractions,  $4\frac{1}{2} - 1\frac{3}{4} = 4\frac{2}{4} - 1\frac{3}{4} = 2\frac{3}{4}$ . Always simplify at the end so the answer is clean and useful.

3. Look at what the numbers mean. For adding and subtracting fractions,  $\frac{1}{4} + \frac{1}{3} = \frac{3}{12} + \frac{4}{12} = \frac{7}{12}$ , so  $\frac{5}{12}$  remains. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

4. Use the setup first. For adding and subtracting fractions,  $\frac{5}{6} - \frac{3}{4} = \frac{10}{12} - \frac{9}{12} = \frac{1}{12}$ . Fractions are easier to combine when the pieces are the same size.

5. Check the size of the answer. For adding and subtracting fractions,  $3\frac{2}{5} - 1\frac{7}{10} = 3\frac{4}{10} - 1\frac{7}{10} = 1\frac{7}{10}$ . Always simplify at the end so the answer is clean and useful.

6. Match the operation to the words. For adding and subtracting fractions,

$2\frac{1}{6} + 3\frac{5}{8} = 5 + \frac{4}{24} + \frac{15}{24} = 5\frac{19}{24}$ . For mixed numbers, converting to improper fractions can make the arithmetic calmer.

7. Write the important values first. For adding and subtracting fractions,  $\frac{5}{8} + \frac{1}{4} = \frac{5}{8} + \frac{2}{8} = \frac{7}{8}$ . Fractions are easier to combine when the pieces are the same size.

8. Follow the pattern carefully. For adding and subtracting fractions, cut length is  $2\frac{1}{4} + 1\frac{5}{6} = 4\frac{1}{12}$ ;  $6\frac{1}{3} - 4\frac{1}{12} = 2\frac{1}{4}$ . Always simplify at the end so the answer is clean and useful.

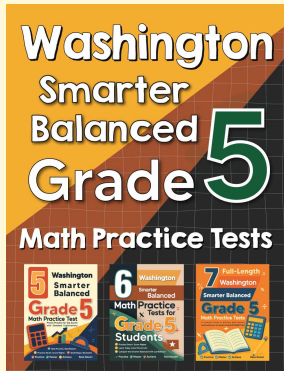
9. Start with the main idea. For adding and subtracting fractions,  $\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15} = \frac{11}{15}$ , so  $\frac{4}{15}$  remains. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

10. Keep the work tidy. For adding and subtracting fractions, used water is  $3\frac{3}{4} + 2\frac{2}{3} = 6\frac{5}{12}$ ;  $10\frac{1}{2} - 6\frac{5}{12} = 4\frac{1}{12}$ . Fractions are easier to combine when the pieces are the same size.



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