

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

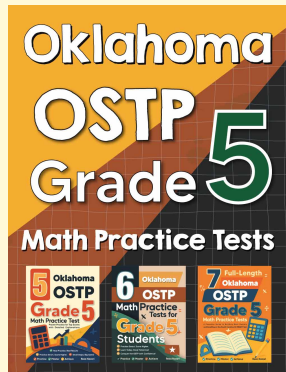
9. Start with the main idea. For adding and subtracting fractions, $\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15} = \frac{11}{15}$, so $\frac{4}{15}$ remains. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

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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