Mixed Operations with Fractions

Mixed Operations with Fractions: Models and Computation

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Match the operation to what changes: combine, remove, scale, or share. For addition or subtraction, first count equal-size parts. When a story has several actions, keep track of what each result measures.

Worked example

Two packets each hold $\frac{3}{8}$ kg of trail mix. Combine them, then give away $\frac{1}{8}$ kg. How much remains?

1. Combine the packets: $2 \times \frac{3}{8} = \frac{6}{8}$ kg.
2. Give away one eighth: $\frac{6}{8} - \frac{1}{8} = \frac{5}{8}$ kg.
Answer: $\frac{5}{8}$ kg.

Practice Problems

Show your thinking.

1. A jug holds $\frac{3}{5}$ L. Add $\frac{1}{4}$ L. Write the operation and find the new volume.

2. A trail section is $\frac{7}{8}$ km long. A walker has gone $\frac{1}{3}$ km. Use equivalent fractions to find the distance left.

3. Put $\frac{2}{5}$ cup of oats into each of 3 bowls. Then use another $\frac{1}{5}$ cup for topping. How many cups of oats are used in all?

4. The shaded part is $\frac{3}{5}$ m. Mark half of that part and write a multiplication equation for the marked length.

One meter; mark half of the shaded part



5. Pour 2 L into servings of $\frac{1}{6}$ L, then put 3 servings in each set. How many complete sets can you make?

6. Each craft kit needs both lengths in the table. Find the total ribbon for 4 kits. Show the amount for one kit first.

Color	Ribbon (m)
Blue	$\frac{3}{8}$
Green	$\frac{1}{4}$

7. A gardener has $\frac{3}{4}$ of a bag of soil and uses one third of that amount. What fraction of a full bag is used? What fraction is left?

8. Split a $\frac{1}{6}$ kg sample equally into 2 cups. Combine one share with another $\frac{1}{4}$ kg. What is the combined mass?

Answer Key

1. $\frac{3}{5} + \frac{1}{4} = \frac{17}{20}$ L.
2. $\frac{13}{24}$ km.
3. $1\frac{2}{5}$ cups.
4. Mark 3 shaded cells; $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$ m.
5. 4 sets.
6. $\frac{5}{8}$ m per kit; $2\frac{1}{2}$ m total.
7. $\frac{1}{4}$ of a bag used; $\frac{1}{2}$ left.
8. $\frac{1}{3}$ kg.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Rename in twentieths: $\frac{3}{5} = \frac{12}{20}$ and $\frac{1}{4} = \frac{5}{20}$.
2. Add: $\frac{12}{20} + \frac{5}{20} = \frac{17}{20}$ L.

Problem 2

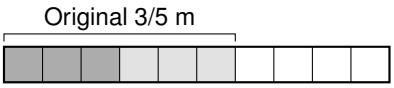
1. Use twenty-fourths: $\frac{7}{8} = \frac{21}{24}$ and $\frac{1}{3} = \frac{8}{24}$.
2. Distance left: $\frac{21}{24} - \frac{8}{24} = \frac{13}{24}$ km.

Problem 3

1. The bowls use $3 \times \frac{2}{5} = \frac{6}{5}$ cups.
2. Add the topping: $\frac{6}{5} + \frac{1}{5} = \frac{7}{5} = 1\frac{2}{5}$ cups.

Problem 4

1. The shaded part has 6 of the 10 equal cells.
2. Half of 6 cells is $6 \div 2 = 3$ cells.
3. The darker half of the shaded part is $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$ m.



Dark cells: marked 3/10 m

Problem 5

1. $2 \div \frac{1}{6} = 2 \times 6 = 12$ servings.
2. $12 \div 3 = 4$ sets of 3 servings.

Problem 6

1. One kit needs $\frac{3}{8} + \frac{1}{4} = \frac{3}{8} + \frac{2}{8} = \frac{5}{8}$ m.
2. Four kits need $4 \times \frac{5}{8} = \frac{20}{8} = 2\frac{1}{2}$ m.

Problem 7

1. Used: $\frac{1}{3} \times \frac{3}{4} = \frac{1}{4}$ of a full bag.
2. Left: $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ of a bag.

Problem 8

1. One share is $\frac{1}{6} \div 2 = \frac{1}{12}$ kg.
2. Combine: $\frac{1}{12} + \frac{1}{4} = \frac{1}{12} + \frac{3}{12} = \frac{1}{3}$ kg.

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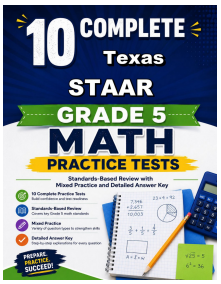

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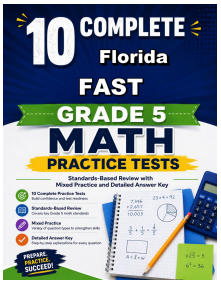

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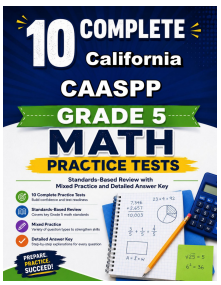

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