

Fraction Mission Control

Find common denominators, solve, and simplify.

GRADE 5 • 5.CE.2

5.CE.2 "The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction of fractions with like and unlike denominators (with and without models)..."

NAME _____

DATE _____

MAKE DENOMINATORS MATCH

When fractions have unlike denominators, find the least common multiple to make a least common denominator.

Rewrite each fraction as an equivalent fraction, add or subtract, then simplify your answer. Use benchmarks such as 0, $\frac{1}{2}$, and 1 to estimate before you solve.

WORKED EXAMPLE

Solve $\frac{3}{5} + \frac{1}{8}$.

1. The LCM of 5 and 8 is 40.
2. $\frac{3}{5} = \frac{24}{40}$ and $\frac{1}{8} = \frac{5}{40}$.
3. $\frac{24}{40} + \frac{5}{40} = \frac{29}{40}$.

Answer: $\frac{29}{40}$

PRACTICE 6 problems

- 1** Find the least common multiple of 4 and 6.

ANSWER _____

- 2** Estimate, then solve: $\frac{2}{6} + \frac{4}{10}$

ANSWER _____

- 3** Solve and simplify: $2\frac{4}{6} - \frac{2}{10}$

ANSWER _____

- 4** Solve and simplify: $\frac{4}{12} + \frac{6}{10}$

ANSWER _____

- 5** Solve and simplify: $6\frac{2}{4} - 4\frac{2}{6}$

ANSWER _____

- 6** Use the model to solve: $\left[\frac{2}{3}\right]\left[\frac{2}{3}\right]\left[\frac{2}{3}\right]$
 $\left[\frac{2}{3}\right]\left[\frac{2}{3}\right]\left[\frac{2}{3}\right]$. Write a multiplication equation and find the total.

ANSWER _____

APPLY IT Show your work

- 1** The art club prints 10 identical badge sheets. Each sheet uses $\frac{2}{10}$ of a pack of sticker paper. The model shows the 10 equal groups: $[\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}] [\frac{2}{10}]$. How many packs of sticker paper does the club use?

WORK SPACE

ANSWER _____

- 2** The media club has $4\frac{2}{6}$ hours to finish a video. The club uses $\frac{2}{4}$ hour to record narration and $\frac{2}{10}$ hour to add captions. How much time is left?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Without first finding the exact difference, decide whether $4\frac{2}{6} - 2\frac{4}{10}$ is greater than or less than 2. Then solve exactly and explain why your decision makes sense.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the least common multiple of 4 and 6.	12
2	Estimate, then solve: $\frac{2}{6} + \frac{4}{10}$	Estimate: 1; exact answer: $\frac{11}{15}$
3	Solve and simplify: $2\frac{4}{6} - \frac{2}{10}$	$2\frac{7}{15}$
4	Solve and simplify: $\frac{4}{12} + \frac{6}{10}$	$\frac{14}{15}$
5	Solve and simplify: $6\frac{2}{4} - 4\frac{2}{6}$	$2\frac{1}{6}$
6	Use the model to solve: $[\frac{2}{3}][\frac{2}{3}][\frac{2}{3}][\frac{2}{3}][\frac{2}{3}][\frac{2}{3}]$. Write a multiplication equation and find the total.	$6 \times \frac{2}{3} = 4$

PART 2 • APPLY IT

- 2 packs** Multiply $10 \times \frac{2}{10}$. Ten groups of $\frac{2}{10}$ make $\frac{20}{10}$, which simplifies to 2.
- 3 $\frac{19}{30}$ hours** Subtract both times used: $4\frac{2}{6} - \frac{2}{4} - \frac{2}{10}$. Rewrite with common denominators and simplify to $3\frac{19}{30}$.

CHALLENGE

Less than 2; $4\frac{2}{6} - 2\frac{4}{10} = 1\frac{14}{15}$. Since $4\frac{1}{3}$ is less than $4\frac{2}{5}$, subtracting $2\frac{2}{5}$ gives a difference less than 2.

Accept equivalent fractions in student work, but require final fraction answers in simplest form. For the estimate in problem 2, accept a reasonable benchmark estimate of 1.