

Fraction Mission Control

Estimate, add, and subtract mixed-number amounts.

GRADE 5 • 5.CE.2.c

5.CE.2.c "Estimate and solve single-step and multistep contextual problems involving addition and subtraction with fractions (proper or improper) and/or mixed numbers having like and unlike denominators, with and without models..."

NAME _____

DATE _____

FIND A COMMON DENOMINATOR

To add or subtract fractions with unlike denominators, rename them using a common denominator. Then add or subtract the numerators, keep the denominator, and simplify the result. Estimate first by thinking about benchmark fractions such as 0, $\frac{1}{2}$, and 1.

WORKED EXAMPLE

$$1\frac{7}{12} + 2\frac{1}{4}$$

1. Rename $\frac{1}{4}$ as $\frac{3}{12}$.
2. Add the fractional parts: $\frac{7}{12} + \frac{3}{12} = \frac{10}{12}$.
3. Combine the whole numbers and fraction: $1 + 2 + \frac{10}{12} = 3\frac{10}{12}$.
4. Simplify $\frac{10}{12}$ to $\frac{5}{6}$.

Answer: $3\frac{5}{6}$

PRACTICE 6 problems

1 $\frac{3}{4} + \frac{1}{8} =$

ANSWER _____

2 $\frac{5}{6} - \frac{1}{3} =$

ANSWER _____

3 $1\frac{2}{5} + \frac{3}{10} =$

ANSWER _____

4 $2\frac{1}{3} - \frac{3}{4} =$

ANSWER _____

5 Estimate, then solve: $\frac{5}{12} + \frac{1}{3} =$

ANSWER _____

6 $3\frac{1}{2} - 1\frac{5}{6} =$

ANSWER _____

APPLY IT Show your work

- 1** Maya is making a stop-motion video. She spends $1\frac{1}{2}$ hours filming and $\frac{3}{4}$ hour editing. She has 3 hours total. Estimate how much time will be left, then find the exact time left.

WORK SPACE

ANSWER _____

- 2** A tablet has $1\frac{1}{2}$ GB of free space. A game art file uses $\frac{5}{6}$ GB, and a soundtrack file uses $\frac{1}{4}$ GB. How much free space is left after both files are saved?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Lina has $4\frac{1}{2}$ minutes of video clips. She cuts $1\frac{2}{3}$ minutes from the beginning and $\frac{3}{4}$ minute from the end. How many minutes of clips remain?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	$\frac{3}{4} + \frac{1}{8} =$	$\frac{7}{8}$
2	$\frac{5}{6} - \frac{1}{3} =$	$\frac{1}{2}$
3	$1\frac{2}{5} + \frac{3}{10} =$	$1\frac{7}{10}$
4	$2\frac{1}{3} - \frac{3}{4} =$	$1\frac{7}{12}$
5	Estimate, then solve: $\frac{5}{12} + \frac{1}{3} =$	about 1; $\frac{3}{4}$
6	$3\frac{1}{2} - 1\frac{5}{6} =$	$1\frac{2}{3}$

PART 2 • APPLY IT

- about $\frac{1}{2}$ hour; $\frac{3}{4}$ hour** Estimate $1\frac{1}{2} + \frac{3}{4}$ as about $2\frac{1}{2}$, so about $\frac{1}{2}$ hour is left. Exactly, $1\frac{1}{2} + \frac{3}{4} = 2\frac{1}{4}$, and $3 - 2\frac{1}{4} = \frac{3}{4}$.
- $\frac{5}{12}$ GB** The two files use $\frac{5}{6} + \frac{1}{4} = 1\frac{1}{12}$ GB. Subtract $1\frac{1}{12}$ GB from $1\frac{1}{2}$ GB to get $\frac{5}{12}$ GB.

CHALLENGE

2 $\frac{1}{12}$ minutes

Accept reasonable benchmark estimates for the estimate items. Final exact answers should be in simplest form, although equivalent fractions may appear in student work.