

Fraction Sense Quest

Add and subtract fractions, then check if your answer makes sense.

GRADE 5 • 5.NF.A.2

CCSS.Math.Content.5.NF.A.2 "Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem..."

NAME _____

DATE _____

MAKE EQUAL PARTS

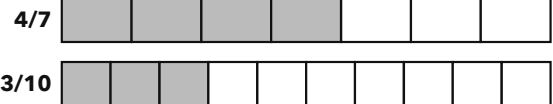
To add or subtract fractions with unlike denominators, rewrite both fractions using a common denominator. Then add or subtract the numerators and keep the denominator. Use 0, $\frac{1}{2}$, and 1 as benchmarks to estimate whether your answer is reasonable. You may also use $\frac{1}{4}$ and $\frac{3}{4}$ as benchmarks. An estimate is approximate; check it against the exact answer.

WORKED EXAMPLE

Find $\frac{4}{7} + \frac{3}{10}$.

1. Estimate with $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$. Each addend is a little greater than its benchmark, so expect a sum a little greater than $\frac{3}{4}$.
2. Use 70 as a common denominator.
3. $\frac{4}{7} = \frac{40}{70}$ and $\frac{3}{10} = \frac{21}{70}$.
4. $\frac{40}{70} + \frac{21}{70} = \frac{61}{70}$.
5. Check: $\frac{61}{70}$ is between $\frac{3}{4}$ and 1, reasonably near the estimate.

Answer: $\frac{61}{70}$



PRACTICE 6 problems

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

ANSWER _____

2 Find $7/8 - 1/3$.

ANSWER _____

3 Find $2/9 + 5/6$. Write your answer as a mixed number.

ANSWER _____

4 Find $11/12 - 3/8$.

ANSWER _____

5 Is $9/10 - 2/5$ closer to 0, $1/2$, or 1? Then find the exact difference.

ANSWER _____

- 6** Ava says that $\frac{1}{6} + \frac{3}{5} = \frac{4}{11}$. Is her answer reasonable? Explain, then find the correct sum.

ANSWER _____

APPLY IT Show your work

- 1** Priya is editing one video project. On Monday, she edited $\frac{3}{8}$ of the project. On Tuesday, she edited another $\frac{5}{12}$ of the same project. Estimate with benchmark fractions, then find the exact fraction of the project Priya edited.

ANSWER _____

- 2** During a robotics challenge, Jalen's team finished $\frac{7}{20}$ of the task before lunch and $\frac{3}{8}$ of the same task after lunch. What fraction of the task did the team finish? What fraction remains?

ANSWER _____

CHALLENGE One step up

Sam says that $5/12 + 7/18 = 12/30$ because he added the numerators and denominators. Is Sam correct? Use benchmark fractions to explain why or why not, then find the correct sum.

PRACTICE 1**29/40****PRACTICE 2****13/24****PRACTICE 3****1 1/18****PRACTICE 4****13/24****PRACTICE 5****It is closer to $1/2$. The exact difference is $1/2$.****PRACTICE 6****No. Both addends are positive, and $4/11$ is less than $3/5$. The correct sum is $23/30$.****APPLY IT 1**Estimate: about 1. Exact fraction edited: $19/24$.Both fractions are close to $1/2$, so the total should be close to 1. Use 24 as a common denominator: $3/8 + 5/12 = 9/24 + 10/24 = 19/24$.**APPLY IT 2**The team finished $29/40$ of the task. $11/40$ of the task remains.Use 40 as a common denominator: $7/20 + 3/8 = 14/40 + 15/40 = 29/40$. Subtract from 1: $40/40 - 29/40 = 11/40$.

CHALLENGE

No. Both addends are close to $\frac{1}{2}$, so the sum should be close to 1, not $\frac{2}{5}$. $\frac{5}{12} + \frac{7}{18} = \frac{15}{36} + \frac{14}{36} = \frac{29}{36}$.

Accept equivalent fractions, such as $\frac{5}{10}$ for $\frac{1}{2}$, when the value is correct. For estimates, accept reasonable benchmark-based answers that are supported by the student's explanation. Practice 3 is $\frac{4}{18} + \frac{15}{18} = \frac{19}{18} = 1 \frac{1}{18}$. Estimates need a stated benchmark comparison; being on opposite sides of $\frac{1}{2}$ alone does not prove a sum is below 1.