Unit 5 · Fraction Concepts and Operations Cheat Sheet

Unit 5 focus: equivalent fractions and adding or subtracting with unlike denominators

1 Big Idea

You can only add or subtract parts that are the same size. Rename the fractions with a common denominator first.

2 Important Vocabulary

numerator	The top number; how many parts you have.	In $\frac{3}{4}$, the numerator is 3
denominator	The bottom number; how many equal parts make one whole.	In $\frac{3}{4}$, the denominator is 4
equivalent fractions	Fractions that name the same amount.	$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$
common denominator	A denominator shared by two or more fractions.	$\frac{1}{3}$ and $\frac{1}{4} \rightarrow \frac{4}{12}$ and $\frac{3}{12}$

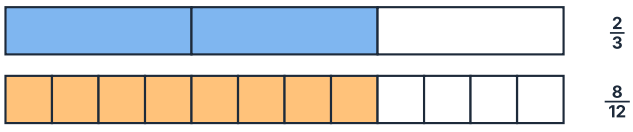
3 How It Works

Add $\frac{2}{3} + \frac{1}{4}$.

Example: $\frac{2}{3} + \frac{1}{4}$
Common denominator 12: $\frac{8}{12} + \frac{3}{12}$
Add the numerators: $\frac{11}{12}$

Answer: $\frac{11}{12}$

4 Visual Model



$\frac{2}{3}$ and $\frac{8}{12}$ cover the same amount.

5 ★ Remember This · Watch Out!

★ Remember this

- Multiply the numerator AND denominator by the same number.
- Keep the denominator when you add: $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$.

⚠ Watch out!

- **Adding the denominators:** $\frac{1}{2} + \frac{1}{3}$ is not $\frac{2}{5}$
- **Not simplifying:** $\frac{6}{8} \rightarrow \frac{3}{4}$

6 Try It!

1. $\frac{5}{6} - \frac{1}{4} = ?$
   Answer: $\frac{7}{12}$
2. Rename $\frac{3}{5}$ with denominator 20.
   Answer: $\frac{12}{20}$

Answers are printed upside down. Turn the page to check!

Unit 5 · Fraction Concepts and Operations Cheat Sheet

More practice: mixed numbers, estimating with benchmarks, and word problems

1 Big Idea

With mixed numbers, add or subtract the fractions and the whole numbers. Use benchmarks (0, $\frac{1}{2}$, 1) to check if an answer makes sense.

2 Important Vocabulary

mixed number	A whole number and a fraction together.	$2\frac{1}{3}$
improper fraction	A fraction greater than or equal to 1, with numerator ≥ denominator.	$\frac{7}{3}$
simplest form	A fraction whose numerator and denominator share no factor except 1.	$\frac{6}{8} = \frac{3}{4}$
benchmark fraction	A friendly fraction used to estimate, such as 0, $\frac{1}{2}$, or 1.	$\frac{5}{8}$ is close to $\frac{1}{2}$

3 How It Works

Subtract $4\frac{1}{3} - 1\frac{5}{6}$.

Example: $4\frac{1}{3} - 1\frac{5}{6}$
Common denominator: $4\frac{2}{6} - 1\frac{5}{6}$
Regroup a whole: $3\frac{8}{6} - 1\frac{5}{6}$
Subtract: $2\frac{3}{6} = 2\frac{1}{2}$

Answer: $2\frac{1}{2}$

4 Visual Model



$\frac{3}{8}$ is close to $\frac{1}{2}$ and $\frac{7}{8}$ is close to 1, so $\frac{3}{8} + \frac{7}{8}$ is about $1\frac{1}{2}$.

5 Remember This · Watch Out!

★ Remember this

- One whole = denominator over itself: $1 = \frac{5}{5}$.
- Estimate first: $\frac{2}{5} + \frac{1}{2}$ must be less than 1.

⚠ Watch out!

- **Not regrouping:** $3\frac{1}{4} - 1\frac{3}{4}$ needs $2\frac{5}{4}$
- **Unreasonable answers:** $\frac{3}{8} + \frac{1}{2}$ cannot be $\frac{4}{10}$

6 Try It!

1. $2\frac{3}{4} + 1\frac{1}{2} = ?$
   Answer: $4\frac{1}{4}$
2. Estimate $\frac{7}{8} + \frac{5}{12}$ with benchmarks.
   Answer: about $1\frac{1}{2}$

Answers are printed upside down. Turn the page to check!