Adding and Subtracting Unlike Fractions (Unlike Denominators)

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

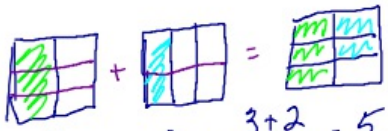
$\frac{2}{3} + \frac{1}{4} = \frac{11}{12}$

$\frac{2}{3} \cdot \frac{4}{4} = \frac{8}{12}$

$\frac{1}{4} \cdot \frac{3}{3} = \frac{3}{12}$

$\frac{8+3}{12} = \frac{11}{12}$

$\frac{1}{2} + \frac{1}{3}$



$\frac{3}{6} + \frac{2}{6} = \frac{3+2}{6} = \frac{5}{6}$

NAME _____ DATE _____ PERIOD _____

Lesson 4 Add and Subtract Unlike Fractions

To add or subtract fractions with different denominators,

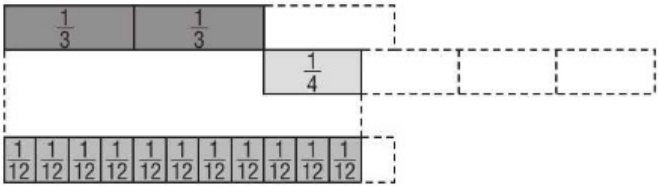
- Rename the fractions using the least common denominator (LCD).
- Add or subtract as with like fractions.
- If necessary, simplify the sum or difference.

Example

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

Method 1 Use a model.

$$\begin{array}{r} \frac{2}{3} \\ +\ \frac{1}{4} \\ \hline \frac{11}{12} \end{array}$$



Method 2 Use the LCD.

$\frac{2}{3} + \frac{1}{4} = \frac{2}{3} \cdot \frac{4}{4} + \frac{1}{4} \cdot \frac{3}{3}$ Rename using the LCD, 12.

$= \frac{8}{12} + \frac{3}{12}$ or $\frac{11}{12}$ Add the fractions.

Exercises

Add or subtract. Write in simplest form.

1. $\frac{1}{2} + \frac{3}{4}$ $\frac{1}{2} \cdot \frac{4}{4} = \frac{4}{8}$ $\frac{3}{4} \cdot \frac{2}{2} = \frac{6}{8}$ $\frac{4}{8} + \frac{6}{8}$ $\frac{4+6}{8} = \frac{10}{8} = 1\frac{2}{8} = 1\frac{1}{4}$

2. $\frac{3}{8} - \frac{1}{2}$

9: 9, 18, 27, 36, 45

12: 12, 24, 36, 48

4

3

5. $\frac{5}{9} + \left(-\frac{5}{12}\right)$ $\frac{5}{9} \cdot \frac{4}{4} = \frac{20}{36}$ $-\frac{5}{12} \cdot \frac{3}{3} = -\frac{15}{36}$ $\frac{20+(-15)}{36} = \frac{5}{36}$

6. $\frac{11}{12} - \frac{3}{4}$

9. $\frac{3}{10} + \frac{7}{12}$

10. $\frac{3}{5} + \frac{2}{3}$

Lesson 4 Skills Practice

Add and Subtract Unlike Fractions

Add or subtract. Write in simplest form.

1. $\frac{8}{15} - \frac{1}{5}$

2. $\frac{5}{6} + \frac{5}{12}$

5. $\frac{19}{20} - \frac{3}{10}$

6. $\frac{4}{9} - \frac{1}{12}$

9. $\frac{7}{8} - \frac{2}{3}$

10. $\frac{8}{9} - \frac{5}{6}$

13. $\frac{3}{5} + \frac{4}{7}$

14. $\frac{11}{12} - \frac{1}{2}$

17. $-\frac{2}{3} - \left(-\frac{3}{4}\right)$

18. $\frac{7}{8} + \frac{1}{12}$

19. $-\frac{3}{10} + \frac{5}{20}$

20. $\frac{7}{12} - \left(-\frac{1}{3}\right)$