



5-4 Adding and Subtracting Like Fractions

(Pages 239–243)

You can add or subtract fractions when they have the same denominators (or *like* denominators). When the sum of two fractions is greater than one, you usually write the sum as a mixed number in simplest form. A **mixed number** indicates the sum of a whole number and a fraction.

Adding and Subtracting Like Fractions	To add or subtract fractions with like denominators, add or subtract the numerators and write the sum over the same denominator. $\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$ and $\frac{a}{c} - \frac{b}{c} = \frac{a-b}{c}$, where $c \neq 0$.
--	--

EXAMPLES

A Solve $r = 1\frac{2}{3} + 4\frac{1}{3}$.

$r = (1 + 4) + \left(\frac{2}{3} + \frac{1}{3}\right)$ *Add the whole numbers and fractions separately.*

$r = 5 + \frac{3}{3}$

$r = 5 + 1$ or 6 $\frac{3}{3} = 1$

B Solve $g = \frac{14}{15} - \frac{30}{15}$.

$g = \frac{14 - 30}{15}$ *Subtract the numerators.*

$g = -\frac{16}{15}$

$g = -\frac{15}{15} + \frac{1}{15}$ or $-1\frac{1}{15}$ *Rewrite as a mixed number.*

Try These Together

1. Solve $k = 6\frac{4}{5} - 2\frac{1}{5}$ and write the solution in simplest form.

2. Solve $\frac{3}{10} + \frac{7}{10} = n$ and write the solution in simplest form.

PRACTICE

Solve each equation. Write the solution in simplest form.

3. $\frac{15}{18} - \frac{10}{18} = t$

4. $x = \frac{13}{21} + \frac{10}{21}$

5. $r = -\frac{4}{35} + \frac{9}{35}$

6. $m = 2\frac{5}{7} + 1\frac{3}{7}$

7. $2\frac{1}{9} - \frac{8}{9} = p$

8. $j = 4\frac{2}{3} + 7\frac{1}{3}$

9. $q = 1\frac{5}{16} - \frac{10}{16}$

10. $w = 2\frac{16}{21} + \left(-\frac{2}{21}\right)$

11. $\frac{3}{8} - \left(-1\frac{1}{8}\right) = b$

12. Simplify the expression $\frac{2}{3}x + \frac{1}{3}x + 2\frac{1}{3}x$.



13. Standardized Test Practice Evaluate the expression $x - y$ for

$x = \frac{7}{9}$ and $y = \frac{1}{9}$.

A $\frac{8}{9}$

B $\frac{2}{3}$

C $\frac{5}{9}$

D $\frac{1}{3}$

Answers: 1. $4\frac{3}{5}$ 2. 1 3. $\frac{18}{5}$ 4. $1\frac{2}{21}$ 5. $\frac{1}{1}$ 6. $4\frac{1}{4}$ 7. $1\frac{2}{9}$ 8. 12 9. $\frac{16}{11}$ 10. $2\frac{2}{3}$ 11. $1\frac{1}{2}$ 12. $3\frac{3}{4}$ 13. B
