

# Subtracting Fractions with Unlike Denominators

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

Subtracting fractions works just like adding them: the pieces must be the same size first. Rewrite each fraction with a **common denominator** (the least common multiple of the two denominators), then **subtract the numerators** and keep the denominator. For  $\frac{1}{2} - \frac{1}{3}$ , use 6:  $\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$ . Always **simplify** your answer at the end. Remember — the denominator tells the size of the piece, so it stays the same; only the numerators are subtracted.

◇ **Example:** Subtract  $\frac{1}{2} - \frac{1}{3}$ .

⇒ The denominators 2 and 3 do not match, so find a common denominator: the least common multiple is 6. Rewrite each fraction:  $\frac{1}{2} = \frac{3}{6}$  and  $\frac{1}{3} = \frac{2}{6}$ . Now the pieces are the same size, so subtract the numerators:  $3 - 2 = 1$ . Keep the denominator 6, giving  $\frac{1}{6}$ , which is already in simplest form.

**Answer:**  $\frac{1}{6}$

## PRACTICE

Subtract. Write each answer in simplest form.

- |                                 |       |                                   |       |
|---------------------------------|-------|-----------------------------------|-------|
| 1. $\frac{1}{2} - \frac{1}{3}$  | _____ | 11. $\frac{7}{9} - \frac{1}{3}$   | _____ |
| 2. $\frac{3}{4} - \frac{1}{6}$  | _____ | 12. $\frac{5}{8} - \frac{1}{3}$   | _____ |
| 3. $\frac{2}{3} - \frac{1}{4}$  | _____ | 13. $\frac{4}{5} - \frac{1}{4}$   | _____ |
| 4. $\frac{5}{6} - \frac{1}{2}$  | _____ | 14. $\frac{11}{12} - \frac{1}{3}$ | _____ |
| 5. $\frac{3}{5} - \frac{1}{2}$  | _____ | 15. $\frac{3}{4} - \frac{1}{8}$   | _____ |
| 6. $\frac{7}{8} - \frac{1}{4}$  | _____ | 16. $\frac{5}{7} - \frac{1}{2}$   | _____ |
| 7. $\frac{4}{5} - \frac{3}{10}$ | _____ | 17. $\frac{9}{10} - \frac{2}{5}$  | _____ |
| 8. $\frac{2}{3} - \frac{2}{5}$  | _____ | 18. $\frac{2}{3} - \frac{1}{12}$  | _____ |
| 9. $\frac{5}{6} - \frac{1}{3}$  | _____ | 19. $\frac{7}{12} - \frac{1}{4}$  | _____ |
| 10. $\frac{3}{4} - \frac{2}{5}$ | _____ | 20. $\frac{5}{9} - \frac{1}{6}$   | _____ |

## ◆ Word Problems

21. A water jug was  $\frac{3}{4}$  full. After lunch it was  $\frac{1}{6}$  full. How much water was used? \_\_\_\_\_
22. Ava had  $\frac{5}{6}$  yard of ribbon and used  $\frac{1}{3}$  yard for a bow. How much ribbon is left? \_\_\_\_\_
23. A phone battery was at  $\frac{4}{5}$  charge and dropped by  $\frac{3}{10}$  during a movie. What fraction of charge remains? \_\_\_\_\_
24. A recipe calls for  $\frac{7}{8}$  cup of milk, but Leo only pours in  $\frac{1}{4}$  cup. How much more milk does he need? \_\_\_\_\_



## Answer Keys

1.  $\frac{1}{6}$
2.  $\frac{7}{12}$
3.  $\frac{5}{12}$
4.  $\frac{1}{3}$
5.  $\frac{1}{10}$
6.  $\frac{5}{8}$
7.  $\frac{1}{2}$
8.  $\frac{4}{15}$
9.  $\frac{1}{2}$
10.  $\frac{7}{20}$
11.  $\frac{4}{9}$
12.  $\frac{7}{24}$
13.  $\frac{11}{20}$

14.  $\frac{7}{12}$
15.  $\frac{5}{8}$
16.  $\frac{3}{14}$
17.  $\frac{1}{2}$
18.  $\frac{7}{12}$
19.  $\frac{1}{3}$
20.  $\frac{7}{18}$
21.  $\frac{7}{12}$  of the jug
22.  $\frac{1}{2}$  yard
23.  $\frac{1}{2}$
24.  $\frac{5}{8}$  cup

### Step-by-Step Explanations

1. Common denominator 6:  $\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$ .
2. Common denominator 12:  $\frac{9}{12} - \frac{2}{12} = \frac{7}{12}$ .
3. Common denominator 12:  $\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$ .
4. Common denominator 6:  $\frac{5}{6} - \frac{3}{6} = \frac{2}{6} = \frac{1}{3}$ .
5. Common denominator 10:  $\frac{6}{10} - \frac{5}{10} = \frac{1}{10}$ .
6. Common denominator 8:  $\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$ .
7. Common denominator 10:  $\frac{8}{10} - \frac{3}{10} = \frac{5}{10} = \frac{1}{2}$ .
8. Common denominator 15:  $\frac{10}{15} - \frac{6}{15} = \frac{4}{15}$ .
9. Common denominator 6:  $\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$ .
10. Common denominator 20:  $\frac{15}{20} - \frac{8}{20} = \frac{7}{20}$ .
11. Common denominator 9:  $\frac{7}{9} - \frac{3}{9} = \frac{4}{9}$ .
12. Common denominator 24:  $\frac{15}{24} - \frac{8}{24} = \frac{7}{24}$ .

13. Common denominator 20:  $\frac{16}{20} - \frac{5}{20} = \frac{11}{20}$ .
14. Common denominator 12:  $\frac{11}{12} - \frac{4}{12} = \frac{7}{12}$ .
15. Common denominator 8:  $\frac{6}{8} - \frac{1}{8} = \frac{5}{8}$ .
16. Common denominator 14:  $\frac{10}{14} - \frac{7}{14} = \frac{3}{14}$ .
17. Common denominator 10:  $\frac{9}{10} - \frac{4}{10} = \frac{5}{10} = \frac{1}{2}$ .
18. Common denominator 12:  $\frac{8}{12} - \frac{1}{12} = \frac{7}{12}$ .
19. Common denominator 12:  $\frac{7}{12} - \frac{3}{12} = \frac{4}{12} = \frac{1}{3}$ .
20. Common denominator 18:  $\frac{10}{18} - \frac{3}{18} = \frac{7}{18}$ .
21. Common denominator 12:  $\frac{9}{12} - \frac{2}{12} = \frac{7}{12}$  of the jug.
22. Common denominator 6:  $\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$  yard.
23. Common denominator 10:  $\frac{8}{10} - \frac{3}{10} = \frac{5}{10} = \frac{1}{2}$  charge.
24. Common denominator 8:  $\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$  cup more.



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