

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.

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|---------------------------------|-------|-----------------------------------|-------|
| 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

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| <p>1. $\frac{1}{6}$</p> <p>2. $\frac{7}{12}$</p> <p>3. $\frac{5}{12}$</p> <p>4. $\frac{1}{3}$</p> <p>5. $\frac{1}{10}$</p> <p>6. $\frac{5}{8}$</p> <p>7. $\frac{1}{2}$</p> <p>8. $\frac{4}{15}$</p> <p>9. $\frac{1}{2}$</p> <p>10. $\frac{7}{20}$</p> <p>11. $\frac{4}{9}$</p> <p>12. $\frac{7}{24}$</p> <p>13. $\frac{11}{20}$</p> | <p>14. $\frac{7}{12}$</p> <p>15. $\frac{5}{8}$</p> <p>16. $\frac{3}{14}$</p> <p>17. $\frac{1}{2}$</p> <p>18. $\frac{7}{12}$</p> <p>19. $\frac{1}{3}$</p> <p>20. $\frac{7}{18}$</p> <p>21. $\frac{7}{12}$ of the jug</p> <p>22. $\frac{1}{2}$ yard</p> <p>23. $\frac{1}{2}$</p> <p>24. $\frac{5}{8}$ cup</p> |
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Step-by-Step Explanations

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