

Adding and Subtracting Mixed Numbers

Name: _____ Date: _____ Score: _____ / 24

Quick Review

A **mixed number** has a whole-number part and a fraction part, like $2\frac{1}{3}$. To add or subtract mixed numbers with the **same denominator**, handle the two parts separately: add (or subtract) the **whole numbers**, then add (or subtract) the **fractions**. If the fractions add up to a whole or more, **regroup** — carry the extra whole over. If you cannot subtract the fraction part, **borrow** one whole and rewrite it as a fraction, such as turning $3\frac{1}{4}$ into $2\frac{5}{4}$. Always write the fraction part in **simplest form** at the end.

◇ **Example:** Add $2\frac{2}{5} + 1\frac{1}{5}$.

⇒ Start with the whole numbers: $2 + 1 = 3$. Next add the fraction parts, which are both fifths, so add the numerators: $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$. The fraction part is less than a whole, so there is nothing to regroup. Put the parts back together to get $3\frac{3}{5}$.

Answer: $3\frac{3}{5}$

PRACTICE

Add or subtract each pair of mixed numbers. Write each answer in simplest form.

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

Word Problems

21. On Saturday, the Park family hiked $2\frac{3}{8}$ miles. On Sunday they hiked $1\frac{2}{8}$ miles. How far did they hike over the weekend?

22. A baker had $5\frac{1}{4}$ cups of sugar and used $2\frac{3}{4}$ cups for a cake. How many cups of sugar are left? _____
23. Two ribbons measure $1\frac{5}{8}$ feet and $2\frac{5}{8}$ feet. What is their total length? _____
24. A water tank held 4 gallons. After watering the plants, $1\frac{3}{10}$ gallons had been used. How much water is still in the tank?



Answer Keys

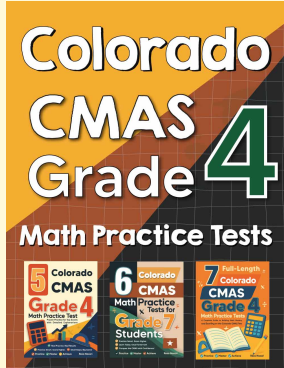
<p>1. $3\frac{1}{2}$</p> <p>2. $3\frac{1}{2}$</p> <p>3. $4\frac{5}{8}$</p> <p>4. $3\frac{7}{10}$</p> <p>5. $6\frac{4}{5}$</p> <p>6. $5\frac{2}{3}$</p> <p>7. $3\frac{3}{4}$</p> <p>8. $4\frac{1}{2}$</p> <p>9. $5\frac{2}{3}$</p> <p>10. $4\frac{1}{2}$</p> <p>11. $2\frac{1}{2}$</p> <p>12. $2\frac{2}{3}$</p>	<p>13. $4\frac{1}{2}$</p> <p>14. $2\frac{1}{2}$</p> <p>15. $3\frac{2}{5}$</p> <p>16. $2\frac{1}{2}$</p> <p>17. $2\frac{1}{3}$</p> <p>18. $1\frac{5}{8}$</p> <p>19. $2\frac{2}{3}$</p> <p>20. $2\frac{5}{8}$</p> <p>21. $3\frac{5}{8}$ miles</p> <p>22. $2\frac{1}{2}$ cups</p> <p>23. $4\frac{2}{3}$ feet</p> <p>24. $2\frac{7}{10}$ gallons</p>
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Step-by-Step Explanations

<p>1. Wholes: $1 + 2 = 3$. Fractions: $\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$.</p> <p>2. Wholes: $2 + 1 = 3$. Fractions: $\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$.</p> <p>3. Wholes: $3 + 1 = 4$. Fractions: $\frac{1}{8} + \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$.</p> <p>4. Wholes: $1 + 2 = 3$. Fractions: $\frac{3}{10} + \frac{4}{10} = \frac{7}{10}$.</p> <p>5. Wholes: $4 + 2 = 6$. Fractions: $\frac{1}{5} + \frac{1}{5} = \frac{2}{5}$.</p> <p>6. Wholes: $2 + 3 = 5$. Fractions: $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$.</p> <p>7. Wholes: $1 + 2 = 3$. Fractions: $\frac{5}{12} + \frac{4}{12} = \frac{9}{12} = \frac{3}{4}$.</p> <p>8. Wholes: $2 + 1 = 3$. Fractions: $\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{1}{2}$, so regroup to $4\frac{1}{2}$.</p> <p>9. Wholes: $3 + 1 = 4$. Fractions: $\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$, regroup to $5\frac{1}{3}$.</p> <p>10. Wholes: $2 + 1 = 3$. Fractions: $\frac{7}{8} + \frac{5}{8} = \frac{12}{8} = 1\frac{4}{8}$, regroup to $4\frac{4}{8} = 4\frac{1}{2}$.</p> <p>11. Wholes: $3 - 1 = 2$. Fractions: $\frac{1}{4} - \frac{1}{4} = \frac{0}{4} = 0$.</p> <p>12. Wholes: $4 - 2 = 2$. Fractions: $\frac{1}{6} - \frac{1}{6} = \frac{0}{6} = 0$.</p> <p>13. Wholes: $5 - 1 = 4$. Fractions: $\frac{7}{8} - \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$.</p>	<p>14. Wholes: $3 - 1 = 2$. Fractions: $\frac{9}{10} - \frac{4}{10} = \frac{5}{10} = \frac{1}{2}$.</p> <p>15. Wholes: $6 - 3 = 3$. Fractions: $\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$.</p> <p>16. Borrow one whole: $4\frac{1}{4} = 3\frac{5}{4}$. Then $3 - 1 = 2$ and $\frac{5}{4} - \frac{1}{4} = \frac{4}{4} = 1$.</p> <p>17. Borrow one whole: $5 = 4\frac{7}{8}$. Then $4 - 2 = 2$ and $\frac{7}{8} - \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$.</p> <p>18. Borrow one whole: $3 = 2\frac{10}{8}$. Then $2 - 1 = 1$ and $\frac{10}{8} - \frac{1}{8} = \frac{9}{8} = 1\frac{1}{8}$.</p> <p>19. Write 4 as $3\frac{3}{3}$. Then $3 - 1 = 2$ and $\frac{3}{3} - \frac{1}{3} = \frac{2}{3}$.</p> <p>20. Write 5 as $4\frac{2}{2}$. Then $4 - 2 = 2$ and $\frac{2}{2} - \frac{1}{2} = \frac{1}{2}$.</p> <p>21. Add the wholes: $2 + 1 = 3$. Add the fractions: $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$. Together that is $3\frac{5}{8}$ miles.</p> <p>22. You cannot do $\frac{1}{4} - \frac{3}{4}$, so borrow a whole: $5\frac{1}{4} = 4\frac{5}{4}$. Then $4 - 2 = 2$ and $\frac{5}{4} - \frac{3}{4} = \frac{2}{4} = \frac{1}{2}$.</p> <p>23. Add the wholes: $1 + 2 = 3$. Add the fractions: $\frac{5}{6} + \frac{5}{6} = \frac{10}{6} = 1\frac{4}{6}$. Regroup: $3 + 1\frac{4}{6} = 4\frac{4}{6} = 4\frac{2}{3}$ feet.</p> <p>24. Write 4 as $3\frac{10}{10}$. Then $3 - 1 = 2$ and $\frac{10}{10} - \frac{3}{10} = \frac{7}{10}$, giving $2\frac{7}{10}$ gallons.</p>
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