

# Adding and Subtracting Mixed Numbers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 24

## Q 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.

1.  $1\frac{1}{4} + 2\frac{1}{4}$  \_\_\_\_\_

2.  $2\frac{1}{6} + 1\frac{2}{6}$  \_\_\_\_\_

3.  $3\frac{2}{8} + 1\frac{3}{8}$  \_\_\_\_\_

4.  $1\frac{3}{10} + 2\frac{4}{10}$  \_\_\_\_\_

5.  $4\frac{1}{5} + 2\frac{3}{5}$  \_\_\_\_\_

6.  $2\frac{1}{3} + 3\frac{1}{3}$  \_\_\_\_\_

7.  $1\frac{5}{12} + 2\frac{4}{12}$  \_\_\_\_\_

8.  $2\frac{3}{4} + 1\frac{3}{4}$  \_\_\_\_\_

9.  $3\frac{5}{6} + 1\frac{5}{6}$  \_\_\_\_\_

10.  $2\frac{7}{8} + 1\frac{5}{8}$  \_\_\_\_\_

11.  $3\frac{3}{4} - 1\frac{1}{4}$  \_\_\_\_\_

12.  $4\frac{5}{6} - 2\frac{1}{6}$  \_\_\_\_\_

13.  $5\frac{7}{8} - 1\frac{3}{8}$  \_\_\_\_\_

14.  $3\frac{9}{10} - 1\frac{4}{10}$  \_\_\_\_\_

15.  $6\frac{4}{5} - 3\frac{2}{5}$  \_\_\_\_\_

16.  $4\frac{1}{4} - 1\frac{3}{4}$  \_\_\_\_\_

17.  $5\frac{1}{6} - 2\frac{5}{6}$  \_\_\_\_\_

18.  $3\frac{2}{8} - 1\frac{5}{8}$  \_\_\_\_\_

19.  $4 - 1\frac{1}{3}$  \_\_\_\_\_

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

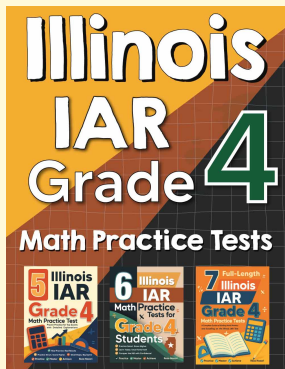
- |   |  |
|---|--|
| <p>1. <math>3\frac{1}{2}</math></p> <p>2. <math>3\frac{1}{2}</math></p> <p>3. <math>4\frac{5}{8}</math></p> <p>4. <math>3\frac{7}{10}</math></p> <p>5. <math>6\frac{4}{5}</math></p> <p>6. <math>5\frac{2}{3}</math></p> <p>7. <math>3\frac{3}{4}</math></p> <p>8. <math>4\frac{1}{2}</math>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

### Step-by-Step Explanations

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