

# Dividing Mixed Numbers

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

## Q Quick Review

Dividing mixed numbers combines two skills you already know. **First, change each mixed number into an improper fraction.** For  $2\frac{1}{2}$ :  $2 \times 2 + 1 = 5$ , so it becomes  $\frac{5}{2}$ . **Then use “keep, change, flip”:** keep the first fraction, change  $\div$  to  $\times$ , and flip the second fraction to its reciprocal. Multiply across, **simplify**, and **convert back** to a mixed number if needed. Doing the conversion first is the key step — never divide the whole parts on their own.

◇ **Example:** Divide  $2\frac{1}{2} \div \frac{3}{4}$ .

⇒ Change the mixed number to an improper fraction: for  $2\frac{1}{2}$ ,  $2 \times 2 + 1 = 5$ , so it is  $\frac{5}{2}$ . Now the problem is  $\frac{5}{2} \div \frac{3}{4}$ . Use “keep, change, flip”: keep  $\frac{5}{2}$ , change to  $\times$ , flip  $\frac{3}{4}$  to  $\frac{4}{3}$ . Multiply:  $\frac{5}{2} \times \frac{4}{3} = \frac{20}{6} = \frac{10}{3}$ . Convert back:  $\frac{10}{3} = 3\frac{1}{3}$ .

**Answer:**  $\frac{10}{3} = 3\frac{1}{3}$

## PRACTICE

Divide. Write each answer in simplest form.

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

## ◆ Word Problems

21. A board is  $2\frac{1}{2}$  feet long. It is cut into  $\frac{3}{4}$ -foot pieces. How many full pieces can be cut, and what fraction of a piece is left over?  
\_\_\_\_\_
22. There are  $3\frac{1}{2}$  pizzas to share equally among groups, with each group getting  $1\frac{3}{4}$  pizzas. How many groups can be served?  
\_\_\_\_\_
23. A pitcher holds  $4\frac{1}{2}$  cups of juice poured into  $1\frac{1}{2}$ -cup glasses. How many glasses can be filled? \_\_\_\_\_
24. A roll of wire is  $3\frac{1}{3}$  meters long. Each project needs  $\frac{5}{6}$  meter. How many projects can be done? \_\_\_\_\_



## Answer Keys

- |                   |                                       |
|-------------------|---------------------------------------|
| 1. $\frac{10}{3}$ | 13. $2$                               |
| 2. $2$            | 14. $3$                               |
| 3. $\frac{3}{2}$  | 15. $4$                               |
| 4. $2$            | 16. $4$                               |
| 5. $\frac{13}{4}$ | 17. $\frac{3}{2}$                     |
| 6. $2$            | 18. $\frac{5}{2}$                     |
| 7. $6$            | 19. $4$                               |
| 8. $2$            | 20. $4$                               |
| 9. $3$            | 21. 3 full pieces, $\frac{1}{3}$ left |
| 10. $8$           | 22. 2 groups                          |
| 11. $3$           | 23. 3 glasses                         |
| 12. $2$           | 24. 4 projects                        |

### Step-by-Step Explanations

- |  |  |
|--|--|
| 1. $\frac{5}{2} \times \frac{4}{3} = \frac{20}{6} = \frac{10}{3} = 3\frac{1}{3}$ .   | 13. $\frac{11}{2} \times \frac{4}{11} = \frac{44}{22} = 2$ .   |
| 2. $\frac{7}{3} \times \frac{6}{7} = \frac{42}{21} = 2$ .                            | 14. $\frac{9}{3} \times \frac{5}{3} = \frac{45}{9} = 5$ .  |
| 3. $\frac{6}{4} \times \frac{2}{3} = \frac{12}{12} = 1$ .                            | 15. $\frac{14}{3} \times \frac{6}{7} = \frac{84}{21} = 4$ .  |
| 4. $\frac{11}{5} \times \frac{10}{11} = \frac{110}{55} = 2$ .                        | 16. $\frac{16}{5} \times \frac{5}{4} = \frac{80}{20} = 4$ .  |
| 5. $\frac{13}{6} \times \frac{3}{2} = \frac{39}{12} = \frac{13}{4} = 3\frac{1}{4}$ . | 17. $\frac{21}{8} \times \frac{4}{7} = \frac{84}{56} = \frac{3}{2} = 1\frac{1}{2}$ .                                     |
| 6. $\frac{7}{2} \times \frac{4}{7} = \frac{28}{14} = 2$ .                            | 18. $\frac{25}{4} \times \frac{2}{5} = \frac{50}{20} = \frac{5}{2} = 2\frac{1}{2}$ .                                     |
| 7. $\frac{3}{2} \times \frac{4}{1} = \frac{12}{2} = 6$ .                             | 19. $\frac{10}{3} \times \frac{6}{5} = \frac{60}{15} = 4$ .  |
| 8. $\frac{10}{3} \times \frac{3}{5} = \frac{30}{15} = 2$ .                           | 20. $\frac{9}{2} \times \frac{8}{9} = \frac{72}{18} = 4$ .   |
| 9. $\frac{2}{2} \times \frac{3}{3} = \frac{6}{6} = 1$ .                              | 21. $\frac{3}{2} \div \frac{3}{3} = \frac{10}{3} = 3\frac{1}{3}$ , so 3 full pieces with $\frac{1}{3}$ of a piece extra. |
| 10. $\frac{8}{3} \times \frac{3}{1} = \frac{24}{3} = 8$ .                            | 22. $\frac{7}{2} \div \frac{7}{4} = \frac{7}{2} \times \frac{4}{7} = \frac{28}{14} = 2$ groups.                          |
| 11. $\frac{15}{4} \times \frac{4}{5} = \frac{60}{20} = 3$ .                          | 23. $\frac{9}{2} \div \frac{3}{2} = \frac{9}{2} \times \frac{2}{3} = \frac{18}{6} = 3$ glasses.                          |
| 12. $\frac{4}{5} \times \frac{4}{5} = \frac{16}{25}$ .                               | 24. $\frac{10}{3} \div \frac{5}{6} = \frac{10}{3} \times \frac{6}{5} = \frac{60}{15} = 4$ projects.                      |



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