

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

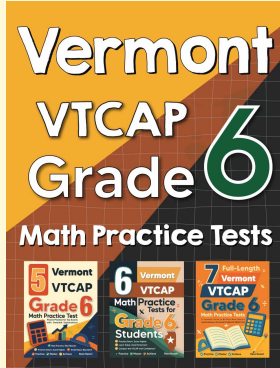
- | | |
|-------------------|---------------------------------------|
| 1. $\frac{10}{3}$ | 13. 2 |
| 2. 2 | 14. 3 |
| 3. $\frac{3}{2}$ | 15. 4 |
| 4. 2 | 16. 4 |
| 5. $\frac{13}{4}$ | 17. $\frac{3}{2}$ |
| 6. 2 | 18. $\frac{5}{2}$ |
| 7. 6 | 19. 4 |
| 8. 2 | 20. 4 |
| 9. 3 | 21. 3 full pieces, $\frac{1}{3}$ 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. $\frac{9}{3} \times \frac{5}{3} = \frac{45}{15} = 3$. |
| 3. $\frac{6}{4} \times \frac{2}{3} = \frac{12}{12} = \frac{3}{2} = 1\frac{1}{2}$. | 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. $\frac{2}{2} \times \frac{3}{2} = \frac{18}{6} = 3$. | 21. $\frac{3}{2} \div \frac{3}{2} = \frac{10}{3} = 3\frac{1}{3}$, 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. $\frac{4}{5} \times \frac{4}{5} = \frac{20}{10} = 2$. | 24. $\frac{10}{3} \div \frac{5}{6} = \frac{10}{3} \times \frac{6}{5} = \frac{60}{15} = 4$ projects. |



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