Dividing Mixed Numbers

Name: _____	Date: _____	Score: _____ / 24

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 $2\frac{1}{2} \div \frac{3}{4}$.

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

Step-by-Step Explanations

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

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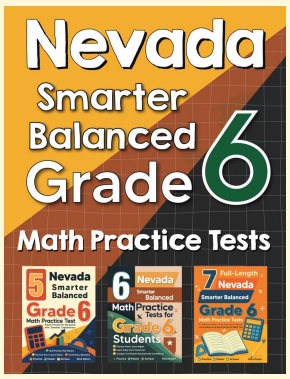

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