Dividing Fractions

To divide by a fraction, you can multiply by its reciprocal. The reciprocal of a number has the numerator and the denominator reversed.

Find $\frac{4}{5} \div \frac{3}{10}$.

Step 1

Rewrite the division as multiplication using the reciprocal of the divisor.

The reciprocal of $\frac{3}{10}$ is $\frac{10}{3}$.

$\frac{4}{5} \div \frac{3}{10} = \frac{4}{5} \times \frac{10}{3}$

Step 2

Divide out common factors if possible. Then multiply.

$$\frac{4}{\cancel{5}_{1}} \times \frac{\cancel{10}^{2}}{3} = \frac{8}{3}$$

Step 3

If your answer is an improper fraction, change it to a mixed number.

$\frac{8}{3} = 2\frac{2}{3}$

Find each quotient. Simplify if possible.

1. $\frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \times$ _____ = _____

$\uparrow$
Reciprocal of $\frac{1}{4}$

2. $\frac{4}{7} \div \frac{8}{21} =$ _____ $\times$ _____ = _____

$\uparrow$
Reciprocal of $\frac{8}{21}$

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

4. $\frac{2}{5} \div \frac{2}{3}$ _____

5. $\frac{5}{8} \div \frac{7}{10}$ _____

6. $\frac{3}{7} \div 3$ _____

7. $\frac{1}{3} \div \frac{8}{9}$ _____

8. $\frac{5}{6} \div \frac{1}{8}$ _____

9. $\frac{5}{9} \div \frac{1}{2}$ _____

10. $\frac{3}{5} \div \frac{3}{4}$ _____

11. $\frac{3}{4} \div \frac{5}{6}$ _____

12. $\frac{9}{10} \div \frac{4}{5}$ _____

13. $\frac{1}{3} \div \frac{3}{8}$ _____

14. $\frac{4}{7} \div \frac{3}{4}$ _____

15. Aaron has $\frac{7}{8}$ gallon of bottled water. How many $\frac{3}{16}$-gallon servings can he pour?

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16. Draw a Picture Show how Rebecca can divide $\frac{3}{4}$ of a cake into 9 pieces. What fraction of the whole cake will each piece be?

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