

Finding the Reciprocal

F-DIV 1

Instructions: Write the reciprocal of each fraction by switching the top and bottom numbers.

1 $\frac{3}{8}$ reciprocal: $\frac{8}{3}$

2 $\frac{8}{12}$ reciprocal: $\frac{12}{8}$

3 $\frac{1}{5}$ reciprocal: $\frac{5}{1}$

4 $\frac{6}{15}$ reciprocal: $\frac{15}{6}$

5 $\frac{3}{4}$ reciprocal: $\frac{4}{3}$

6 $\frac{20}{35}$ reciprocal: $\frac{35}{20}$

7 $\frac{2}{7}$ reciprocal: $\frac{7}{2}$

8 $\frac{7}{11}$ reciprocal: $\frac{11}{7}$

9 $\frac{8}{19}$ reciprocal: $\frac{19}{8}$

10 $\frac{12}{32}$ reciprocal: $\frac{32}{12}$

Instructions: Multiply each fraction by its reciprocal to get a 'whole fraction' which is just 1.

1 $\frac{2}{5} \times \frac{5}{2} = \frac{10}{10} = 1$

2 $\frac{4}{5} \times \frac{5}{4} = \frac{20}{20} = 1$

3 $\frac{4}{7} \times \frac{7}{4} = \frac{28}{28} = 1$

4 $\frac{5}{3} \times \frac{3}{5} = \frac{15}{15} = 1$

5 $\frac{3}{7} \times \frac{7}{3} = \frac{21}{21} = 1$

6 $\frac{1}{11} \times \frac{11}{1} = \frac{11}{11} = 1$

7 $\frac{6}{8} \times \frac{8}{6} = \frac{48}{48} = 1$

8 $\frac{7}{9} \times \frac{9}{7} = \frac{63}{63} = 1$

9 $\frac{2}{9} \times \frac{9}{2} = \frac{18}{18} = 1$

10 $\frac{3}{12} \times \frac{12}{3} = \frac{36}{36} = 1$

Dividing Fractions (Guided Practice)

F-DIV 2

Instructions: Solve these division problems by multiplying by the reciprocal. Use the guides to help you. You do **not** need to simplify your answers.

$$\begin{aligned} \text{1} \quad & \frac{3}{4} \div \frac{2}{5} \\ & \frac{3}{4} \times \frac{5}{2} = \frac{15}{8} \end{aligned}$$

$$\begin{aligned} \text{2} \quad & \frac{5}{4} \div \frac{2}{3} \\ & \frac{5}{4} \times \frac{3}{2} = \frac{15}{8} \end{aligned}$$

$$\begin{aligned} \text{3} \quad & \frac{1}{7} \div \frac{1}{4} \\ & \frac{1}{7} \times \frac{4}{1} = \frac{4}{7} \end{aligned}$$

$$\begin{aligned} \text{4} \quad & \frac{8}{13} \div \frac{1}{2} \\ & \frac{8}{13} \times \frac{2}{1} = \frac{16}{13} \end{aligned}$$

$$\begin{aligned} \text{5} \quad & \frac{3}{5} \div \frac{1}{6} \\ & \frac{3}{5} \times \frac{6}{1} = \frac{18}{5} \end{aligned}$$

$$\begin{aligned} \text{6} \quad & \frac{4}{8} \div \frac{5}{1} \\ & \frac{4}{8} \times \frac{1}{5} = \frac{4}{40} \end{aligned}$$

$$\begin{aligned} \text{7} \quad & \frac{5}{8} \div \frac{3}{4} \\ & \frac{5}{8} \times \frac{4}{3} = \frac{20}{24} \end{aligned}$$

$$\begin{aligned} \text{8} \quad & \frac{1}{12} \div \frac{1}{12} \\ & \frac{1}{12} \times \frac{12}{1} = \frac{12}{12} = 1 \end{aligned}$$

$$\begin{aligned} \text{9} \quad & \frac{7}{9} \div \frac{2}{3} \\ & \frac{7}{9} \times \frac{3}{2} = \frac{21}{18} \end{aligned}$$

$$\begin{aligned} \text{10} \quad & \frac{1}{8} \div \frac{3}{16} \\ & \frac{1}{8} \times \frac{16}{3} = \frac{16}{24} \end{aligned}$$

$$\begin{aligned} \text{11} \quad & \frac{5}{11} \div \frac{4}{7} \\ & \frac{5}{11} \times \frac{7}{4} = \frac{35}{44} \end{aligned}$$

$$\begin{aligned} \text{12} \quad & \frac{9}{10} \div \frac{5}{6} \\ & \frac{9}{10} \times \frac{6}{5} = \frac{54}{50} \end{aligned}$$

Dividing Fractions (More Practice)

F-DIV 3

Instructions: Solve these division problems by multiplying by the reciprocal. You do **not** need to simplify your answers.

$$\begin{aligned} 1 \quad & \frac{1}{6} \div \frac{3}{7} \\ & \frac{1}{6} \times \frac{7}{3} = \frac{7}{18} \end{aligned}$$

$$\begin{aligned} 2 \quad & \frac{5}{6} \div \frac{3}{4} \\ & \frac{5}{6} \times \frac{4}{3} = \frac{20}{18} \end{aligned}$$

$$\begin{aligned} 3 \quad & \frac{5}{12} \div \frac{1}{4} \\ & \frac{5}{12} \times \frac{4}{1} = \frac{20}{12} \end{aligned}$$

$$\begin{aligned} 4 \quad & \frac{4}{11} \div \frac{5}{7} \\ & \frac{4}{11} \times \frac{7}{5} = \frac{28}{55} \end{aligned}$$

$$\begin{aligned} 5 \quad & \frac{4}{7} \div \frac{2}{3} \\ & \frac{4}{7} \times \frac{3}{2} = \frac{12}{14} \end{aligned}$$

$$\begin{aligned} 6 \quad & \frac{9}{2} \div \frac{5}{1} \\ & \frac{9}{2} \times \frac{1}{5} = \frac{9}{10} \end{aligned}$$

$$\begin{aligned} 7 \quad & \frac{6}{5} \div \frac{5}{3} \\ & \frac{6}{5} \times \frac{3}{5} = \frac{18}{25} \end{aligned}$$

$$\begin{aligned} 8 \quad & \frac{2}{7} \div \frac{7}{9} \\ & \frac{2}{7} \times \frac{9}{7} = \frac{18}{49} \end{aligned}$$

$$\begin{aligned} 9 \quad & \frac{1}{16} \div \frac{1}{6} \\ & \frac{1}{16} \times \frac{6}{1} = \frac{6}{16} \end{aligned}$$

$$\begin{aligned} 10 \quad & \frac{11}{12} \div \frac{2}{3} \\ & \frac{11}{12} \times \frac{3}{2} = \frac{33}{24} \end{aligned}$$

$$\begin{aligned} 11 \quad & \frac{3}{10} \div \frac{7}{8} \\ & \frac{3}{10} \times \frac{8}{7} = \frac{24}{70} \end{aligned}$$

$$\begin{aligned} 12 \quad & \frac{10}{8} \div \frac{8}{9} \\ & \frac{10}{8} \times \frac{9}{8} = \frac{90}{64} \end{aligned}$$

Dividing a Fraction by a Whole Number (and Vice-Versa)

F-DIV 4

Instructions: Solve these division problems. You do **not** need to simplify your answers in this exercise set.

$$\begin{aligned} 1 \quad \frac{3}{5} \div 2 &= \frac{3}{5} \div \frac{2}{1} \\ &= \frac{3}{5} \times \frac{1}{2} = \frac{3}{10} \end{aligned}$$

$$\begin{aligned} 2 \quad 5 \div \frac{3}{8} &= \frac{5}{1} \div \frac{3}{8} \\ &= \frac{5}{1} \times \frac{8}{3} = \frac{40}{3} \end{aligned}$$

$$\begin{aligned} 3 \quad \frac{1}{4} \div 3 &= \frac{1}{4} \div \frac{3}{1} \\ &= \frac{1}{4} \times \frac{1}{3} = \frac{1}{12} \end{aligned}$$

$$\begin{aligned} 4 \quad 10 \div \frac{9}{2} &= \frac{10}{1} \div \frac{9}{2} \\ &= \frac{10}{1} \times \frac{2}{9} = \frac{20}{9} \end{aligned}$$

$$\begin{aligned} 5 \quad \frac{6}{7} \div 5 &= \frac{6}{7} \div \frac{5}{1} \\ &= \frac{6}{7} \times \frac{1}{5} = \frac{6}{35} \end{aligned}$$

$$\begin{aligned} 6 \quad \frac{1}{4} \div 4 &= \frac{1}{4} \div \frac{4}{1} \\ &= \frac{1}{4} \times \frac{1}{4} = \frac{1}{16} \end{aligned}$$

$$\begin{aligned} 7 \quad 9 \div \frac{4}{7} &= \frac{9}{1} \div \frac{4}{7} \\ &= \frac{9}{1} \times \frac{7}{4} = \frac{63}{4} \end{aligned}$$

$$\begin{aligned} 8 \quad 8 \div \frac{3}{4} &= \frac{8}{1} \div \frac{3}{4} \\ &= \frac{8}{1} \times \frac{4}{3} = \frac{32}{3} \end{aligned}$$

$$\begin{aligned} 9 \quad \frac{5}{12} \div 2 &= \frac{5}{12} \div \frac{2}{1} \\ &= \frac{5}{12} \times \frac{1}{2} = \frac{5}{24} \end{aligned}$$

$$\begin{aligned} 10 \quad 4 \div \frac{1}{10} &= \frac{4}{1} \div \frac{1}{10} \\ &= \frac{4}{1} \times \frac{10}{1} = \frac{40}{1} = 40 \end{aligned}$$

Fractions Made From Fractions

F-DIV 5

Instructions: Solve these fraction division problems. Some have guides to help you. You do **not** need to simplify your answers.

1
$$\frac{\frac{1}{2}}{\frac{5}{7}} = \frac{1}{2} \times \frac{7}{5} = \frac{7}{10}$$

reciprocal

2
$$\frac{\frac{2}{5}}{\frac{6}{7}} = \frac{2}{5} \times \frac{7}{6} = \frac{14}{30}$$

3
$$\frac{\frac{4}{7}}{\frac{1}{3}} = \frac{4}{7} \times \frac{3}{1} = \frac{12}{7}$$

4
$$\frac{\frac{1}{4}}{\frac{1}{4}} = \frac{1}{4} \times \frac{4}{1} = \frac{4}{4} = 1$$

5
$$\frac{\frac{3}{8}}{\frac{5}{2}} = \frac{3}{8} \times \frac{2}{5} = \frac{6}{40}$$

6
$$\frac{\frac{4}{10}}{\frac{3}{7}} = \frac{4}{10} \times \frac{7}{3} = \frac{28}{30}$$

7
$$\frac{\frac{5}{9}}{\frac{6}{9}} = \frac{5}{9} \times \frac{9}{6} = \frac{45}{54}$$

8
$$\frac{\frac{2}{9}}{\frac{4}{6}} = \frac{2}{9} \times \frac{6}{4} = \frac{12}{36}$$

9
$$\frac{\frac{1}{5}}{\frac{2}{11}} = \frac{1}{5} \times \frac{11}{2} = \frac{11}{10}$$

10
$$\frac{\frac{9}{12}}{\frac{2}{3}} = \frac{9}{12} \times \frac{3}{2} = \frac{27}{24}$$

11
$$\frac{\frac{7}{12}}{\frac{4}{5}} = \frac{7}{12} \times \frac{5}{4} = \frac{35}{48}$$

12
$$\frac{\frac{6}{7}}{\frac{8}{9}} = \frac{6}{7} \times \frac{9}{8} = \frac{54}{56}$$