

# Multiplying & Dividing Rational Numbers

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11:29 AM

Mathematics 9  
Rational Numbers  
Multiplying & Dividing Rational Numbers

## A. Multiplying Rational Numbers

Remember that when we multiply basic fractions we multiply across the numerators (top) and multiply across the denominators (bottoms). Cross reducing may be useful, particularly if you are dealing with very large fractions. **Remember to pay particular attention signs and to the integer rules when working with the numbers.**

Multiplying Integers  
Signs same = positive  
Signs different = negative

$$\left(-\frac{1}{4}\right) \times \left(-\frac{2}{3}\right)$$

$$= \boxed{\frac{1}{6}}$$

$$\begin{array}{r} 1 \longrightarrow 3 \\ \cancel{5} \times \cancel{-6} \\ \cancel{8} \quad \cancel{25} \\ 4 \longrightarrow 5 \end{array}$$

$$= \boxed{-\frac{3}{20}}$$

## B. Dividing Rational Numbers

Remember the KFC rule to change the division question into a multiplication question. Then just follow basic rules of multiplying fractions. **Remember to pay particular attention signs and to the integer rules when working with the numbers.**

$$\left(-\frac{3}{4}\right) \div \frac{3}{5}$$

$= \boxed{-\frac{5}{4} \text{ or } -1\frac{1}{4}}$

K - Keep first fraction  
 F - Flip second fraction  
 C - Change divide to multiply

$$\left(\frac{6}{-15}\right) \div \left(\frac{8}{-12}\right)$$

$= \boxed{\frac{3}{5}}$

## C. Practice Questions

1)

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

2)  $\frac{15}{16} \div \left(\frac{9}{-10}\right)$

$$= \boxed{-\frac{25}{24} \text{ or } -1\frac{1}{24}}$$

3)  $\left(-\frac{8}{10}\right) \div \left(\frac{-6}{-15}\right)$

$$= -\frac{12}{6} = \boxed{-2}$$

Assignment: Multiplying & Dividing Rational Numbers Assignment

Name: \_\_\_\_\_

Multiplying & Dividing Rational Numbers

$$1. \quad \frac{2}{3} \times \left( -\frac{3}{4} \right)$$

$$2. \quad \frac{5}{8} \times \frac{10}{15}$$

$$3. \quad \left( -\frac{3}{8} \right) \div \left( -\frac{9}{10} \right)$$

$$4. \quad \left( -\frac{7}{9} \right) \div \frac{5}{6}$$

$$5. \quad \left( \frac{-4}{-6} \right) \times \left( \frac{-9}{10} \right)$$

$$6. \quad \left( -\frac{7}{27} \right) \div \left( \frac{14}{-15} \right)$$

$$7. \quad \left( \frac{5}{-8} \right) \div \frac{4}{5}$$

$$8. \quad \left( \frac{-24}{-25} \right) \times \left( \frac{-10}{-15} \right)$$

$$9. \left(\frac{-5}{-8}\right) \div \frac{10}{12}$$

$$10. \frac{16}{25} \times \frac{15}{18}$$

$$11. \left(-\frac{10}{11}\right) \times \left(\frac{-22}{35}\right)$$

$$12. \frac{12}{45} \div \frac{8}{18}$$

$$13. \left(\frac{-15}{-18}\right) \div \frac{20}{21}$$

$$14. \frac{5}{12} \times \frac{6}{16}$$

$$15. \frac{4}{5} \times \left(\frac{10}{-18}\right)$$

$$16. \left(\frac{-6}{9}\right) \div \left(\frac{-12}{-18}\right)$$

$$17. \left(\frac{-12}{-8}\right) \times \left(\frac{-4}{-10}\right)$$

$$18. \left(-\frac{16}{18}\right) \div \left(\frac{20}{-8}\right)$$

Answers

$$1) -\frac{1}{2}$$

$$2) \frac{5}{12}$$

$$3) \frac{5}{12}$$

$$4) -\frac{14}{15}$$

$$5) -\frac{3}{5}$$

$$6) \frac{5}{18}$$

$$7) -\frac{25}{32}$$

$$8) \frac{16}{25}$$

$$9) \frac{3}{4}$$

$$10) \frac{8}{15}$$

$$11) \frac{4}{7}$$

$$12) \frac{3}{5}$$

$$13) \frac{7}{8}$$

$$14) \frac{5}{32}$$

$$15) -\frac{4}{9}$$

$$16) -1$$

$$17) \frac{3}{5}$$

$$18) \frac{16}{45}$$