

ALG 1: RATIONAL NUMBERS

Wed 8/22

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Objectives: The students will be able to solve problems by multiplying and dividing fractions.

Multiplying and Dividing Rational Numbers (specifically fractions)

When multiplying fractions, you MUST change mixed numbers to improper fractions. You do NOT get a common denominator. Cross cancel if at all possible. Some of the fractions include negative numbers. Follow your integer rules.

Simplify. All answers should be in simplest form.


1) $\frac{1}{4} * \frac{1}{2} = \frac{1}{8}$ 2) $-\frac{7}{8} * -\frac{5}{3} = 2\frac{1}{3}$ 3) $2\frac{2}{9} * 1\frac{3}{4} = 3\frac{8}{9}$ 4) $1\frac{3}{25} * -7\frac{1}{2} = -8$

Handwritten work for problem 1: $\frac{1 \cdot 1}{4 \cdot 2} = \frac{1}{8}$

Handwritten work for problem 2: $\frac{7 \cdot 5}{1 \cdot 3} = \frac{35}{3} = 2\frac{1}{3}$

Handwritten work for problem 3: $\frac{20}{9} * \frac{7}{4} = \frac{5 \cdot 7}{9 \cdot 1} = \frac{35}{9} = 3\frac{8}{9}$

Handwritten work for problem 4: $\frac{14}{25} * \frac{153}{2} = \frac{14 \cdot 3}{5 \cdot 1} = \frac{42}{5} = -8$



When dividing fractions, you MUST change mixed numbers to improper fractions first. Then change to multiplying by the reciprocal. ONLY then can you cross cancel.

Simplify. All answers should be in simplest form.

1) $\frac{6}{7} \div \frac{2}{3} = 2\frac{3}{7}$ 2) $-\frac{5}{9} \div \frac{10}{3} = -\frac{1}{6}$ 3) $2\frac{5}{8} \div -\frac{3}{4} = -3\frac{1}{2}$ 4) $-3\frac{3}{5} \div -2\frac{7}{10} = 1\frac{1}{3}$

Handwritten work for problem 1: $\frac{3 \cdot 6}{7 \cdot 2} = \frac{3 \cdot 3}{7 \cdot 1} = \frac{9}{7} = 2\frac{2}{7}$

Handwritten work for problem 2: $\frac{1 \cdot 5}{3 \cdot 9} * \frac{3}{10} = \frac{1 \cdot 1}{3 \cdot 2} = \frac{1}{6}$

Handwritten work for problem 3: $\frac{7 \cdot 1}{2 \cdot 8} * \frac{4}{3} = \frac{7 \cdot 1}{2 \cdot 1} = \frac{7}{2} = 3\frac{1}{2}$

Handwritten work for problem 4: $\frac{18}{5} \div \frac{27}{10} = \frac{18}{5} * \frac{10}{27} = \frac{2 \cdot 2}{1 \cdot 3} = \frac{4}{3} = 1\frac{1}{3}$

Distributive Property with Fractions | use the word "of" when multiplying by a fraction.

1. $\frac{1}{3}(6x + 9) = 2x + 3$

2. $-\frac{1}{4}(8x - 12) = 2x - 3$

3. $-\frac{1}{5}(5x + 10) = -x + 2$

4. $\frac{2}{3}(6x + 9) = 4x + 6$

Think...
What is $\frac{1}{3}$ of $6x$
then $\frac{2}{3}$ is twice that amount!