

Mini Lesson #2

Sept. 22, 2014 Sept. 28, 2015

Nov. 19, 2020



For Tasks #2 & 3

Oct. 24, 2018

(others may listen if you find it helpful to you!)

- Division

Section 3.5: Dividing Rational Numbers

Dividing Integers

a). $(-15) \div (-5) = 3$

b). $\frac{(-18)}{9} = -2$

÷	-	+
-	+	-
+	-	+

*** remember the rules with the signs!!!

Dividing Decimals

a). $(-5.1) \div 3$

$$= -1.7$$

b). $\frac{(-7.5)}{-5}$

$$= 1.5$$

c). $(-10.5) \div 0.25$

$$= -42$$

Try these:

1. $(-20.4) \div (-6)$

2). $8.42 \div (-2)$

3. $\frac{-138}{6}$

4. $(-0.25) \div (-0.3)$

Answers: 1. 3.4 2. -4.21 3. -23 4. $0.8\bar{3}$

Dividing Fractions

When dividing fractions, keep the first fraction the same and multiply by the reciprocal of the second fraction.

$\frac{-2}{5} \div \frac{3}{10}$

keep the same \rightarrow $\frac{-2}{5}$ \leftarrow switch to its reciprocal $\frac{3}{10}$ becomes $\frac{10}{3}$
 \uparrow
 change to \times

$\frac{-2}{5} \div \frac{3}{10} = \frac{-2}{5} \times \frac{10}{3} = \frac{-20}{15} = \frac{-4}{3}$

Still reduce to lowest terms

1. $\frac{3}{4} \div -\frac{9}{8}$

$\frac{3}{4} \times \left(-\frac{8}{9}\right) = -\frac{24}{36} = -\frac{2}{3}$

2. $1\frac{1}{4} \div (-3)$

$1\frac{1}{4} \div \left(-\frac{3}{1}\right) = 1\frac{1}{4} \times \left(-\frac{1}{3}\right) = -\frac{5}{12}$

3. $16 \div \frac{-4}{5}$

$16 \div \left(-\frac{4}{5}\right) = 16 \times \left(-\frac{5}{4}\right) = -\frac{80}{4} = -20$

Try These!

$$4. \frac{-2}{9} \div -\frac{4}{7}$$

$$5. 2\frac{1}{2} \div \frac{25}{14}$$

$$6. \frac{8}{11} \div -4$$

Answers: . 4. $\frac{7}{18}$ 5. $\frac{7}{5}$ 6. $\frac{-2}{11}$

Dividing Rational Numbers

Dividing Rational Numbers with the **SAME** Sign

Words The quotient of two rational numbers with the same sign is **positive**.

Numbers $-10.35 \div (-2.3) = 4.5$ $5 \div \frac{2}{8} = 20$

Dividing Rational Numbers with **DIFFERENT** Signs

Words The quotient of two rational numbers with different signs is **negative**.

Numbers $1.03 \div (-10.3) = -0.1$ $-\frac{7}{10} \div \frac{2}{5} = -1\frac{3}{4}$

COMPLEX FRACTION

A fraction that has a fraction in its numerator, denominator, or both.

$$\frac{\frac{3}{5}}{\frac{1}{2}} = \frac{3}{5} \div \frac{1}{2}$$

PRACTICE

Divide. Write each answer in simplest form.

EXAMPLE 1

$$8 \div \left(-\frac{4}{3}\right)$$

$$8 \times \left(-\frac{3}{4}\right)$$

$$= -\frac{24}{4}$$

$$= -6$$

EXAMPLE 2

$$\frac{-\frac{2}{3}}{-\frac{5}{6}} \left(-\frac{2}{3}\right) \div \left(-\frac{5}{6}\right)$$

$$\left(-\frac{2}{3}\right) \times \left(-\frac{6}{5}\right)$$

$$= \frac{12}{15} = \frac{4}{5}$$



WORD PROBLEM

A water pail in your backyard has a small hole in it. You notice that it has drained a total of 2.5 liters in 5 days. What is the average change in water volume each day?

$$2.5 \div 5 = 0.5 \text{ L/Day}$$

$$-0.5$$

Dividing Rational Numbers

Dividing Rational Numbers with the SAME Sign

Words The quotient of two rational numbers with the same sign is positive.

Numbers $-10.35 \div (-2.3) = 4.5$ $5 \div \frac{2}{8} = 20$

Dividing Rational Numbers with DIFFERENT Signs

Words The quotient of two rational numbers with different signs is negative.

Numbers $1.03 \div (-10.3) = -0.1$ $-\frac{7}{10} \div \frac{2}{5} = -1\frac{3}{4}$

COMPLEX FRACTION

A fraction that has a fraction in its numerator, denominator, or both.

$$\frac{\frac{3}{5}}{\frac{1}{2}} = \frac{3}{5} \div \frac{1}{2}$$

PRACTICE

Divide. Write each answer in simplest form.

EXAMPLE 1

$$8 \div \left(-\frac{4}{3}\right)$$

-6

EXAMPLE 2

$$\frac{-\frac{2}{3}}{-\frac{5}{6}}$$

$\frac{4}{5}$



WORD PROBLEM

A water pail in your backyard has a small hole in it. You notice that it has drained a total of 2.5 liters in 5 days. What is the average change in water volume each day?

-0.5 liters per day

End of mini lesson #2