

Warm-Up

September 18, 2018

Zoe owes her mother \$36.25, then Zoe borrows another \$25.35.

- A. Write each amount as a rational number.

-36.25

-25.35

- b. Write an expression for the amount Zoe owes. How much does she owe?

$$\mathbf{-36.25 + -25.35 = -61.60}$$

- c. Zoe pays back 14.75.

Write an expression for the amount Zoe now owes. How much does she owe?

$$\mathbf{-61.60 + 14.75 = -46.85}$$

$$\left(\frac{-2}{-7}\right) + \left(\frac{-1}{3}\right)$$

$$\frac{2}{7} + \frac{-1}{3}$$

$$-2\frac{1}{5} - 7\frac{2}{3}$$
$$\times^3 \quad \times^5$$
$$-\frac{11}{5} - \frac{23}{3}$$
$$\times^5 \quad \times^5$$

$$\boxed{-\frac{33}{15} - \frac{115}{15}}$$

$$-\frac{148}{15}$$

$$\textcircled{-9\frac{13}{15}}$$

Multiplying Rational Numbers

Section 3.4

Positive x positive (+)
(+) (+)

Negative x negative (+)
(-) (-)

Negative x positive (-)
(-) (+)

What will the sign be???

A. $\overset{(-)}{-4} \times \overset{(-)}{-1} \times \overset{(+)}{9} \times \overset{(-)}{-3} \quad (-)$

B. $5 \times 4 \times 3 \times \overset{(-)}{-3} \times \overset{(-)}{-4} \times 3 \quad (+)$

Multiplying Fractions

Multiply the NUMERATOR x NUMERATOR
DENOMINATOR x DENOMINATOR



*NO COMMON DENOMINATORS WHEN MULTIPLYING!
 [Find the product for the following.] Express your answer in lowest terms and as a mixed number when necessary.

$$\frac{6}{7} \times \frac{5}{6} = \frac{30}{42} = \frac{15}{21} = \frac{5}{7}$$

Brackets



When brackets are placed beside each other it is a multiplication therefore the "x" is not needed.

$$-3 \times -4$$

$$(-3)(-4)$$

Evaluate and express in lowest terms:

$$\cancel{\left(-\frac{2}{5}\right) \times \frac{7}{-3}}$$

$$-\frac{2}{5} \times \frac{-7}{3}$$

$$\left(\frac{14}{15}\right)$$

$$\left(\frac{5}{6}\right) \times -3\frac{1}{2}$$

$$\frac{5}{6} \times \frac{-7}{2}$$

$$\frac{-35}{12} \quad \left(-2\frac{11}{12}\right)$$

c)

$$\left(-\frac{1}{6}\right) \left(1\frac{3}{4}\right)$$

$$-\frac{1}{6} \times \frac{7}{4}$$

$$-\frac{7}{24}$$

d)

$$\left(2\frac{4}{5}\right) - \left(-\frac{3}{6}\right)$$

$$\overset{\times 6}{\frac{14}{5}} - \overset{\times 5}{-\frac{3}{6}}$$

$$\frac{84}{30} - \frac{-15}{30}$$

$$\frac{99}{30} = 3\frac{1}{30}$$

$$3\frac{3}{10}$$

$$\frac{1}{3} \times \frac{2}{-7} \times -2\frac{3}{4}$$

$$\frac{1}{3} \times \frac{-2}{7} \times -\frac{11}{4}$$

$$\frac{22}{84} = \frac{11}{42}$$

A. $\frac{2}{-5} + -3\frac{1}{6}$

$$+6 \frac{-2}{5} + \frac{-19}{6} \times 5$$

$$\frac{-12}{30} + \frac{-95}{30}$$

$$\frac{-107}{30}$$

$$\left(-3\frac{17}{30}\right)$$

B. $\left(\frac{7}{-8}\right)\left(-2\frac{1}{4}\right)$

$$\frac{-7}{8} \times \frac{-9}{4}$$

$$\frac{63}{32}$$

$$= \left(3\frac{31}{32}\right)$$

Section 3.5 Dividing Rational Numbers

The Rules for Positive and Negatives still apply when dividing rational numbers

What will the sign be?

$$a) \left(\frac{8}{9}\right) \div \left(\frac{-1}{3}\right)$$

(-)

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

(+)

What does reciprocal mean???

Two numbers whose product are 1



← flip the fraction

Rational#	Reciprocal
A. $\frac{4}{1}$	$\frac{1}{4}$
B. $\frac{3}{2}$	$\frac{2}{3}$

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

What is the reciprocal of..



c) $-\frac{2}{7}$

$-\frac{7}{2}$

d) $\frac{9}{-8}$

e) $2\frac{4}{5}$

f) $-3\frac{2}{3}$

To Divide Fractions:

1. Multiply by the reciprocal of the second fraction [follows the \div sign]
2. Multiply the numerators of the fractions
3. Multiply the denominators of the fractions
4. Express in simplest form.