

## 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. $\frac{3}{2}$	$\frac{2}{3}$

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

What is the reciprocal of..



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

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

e)  $2\frac{4}{5}$   
 $\frac{14}{5}$   
 $\frac{5}{14}$

f)  $-3\frac{2}{3}$   
 $-\frac{11}{3}$   
 $\frac{-3}{11}$

Warm-Up...

September 19, 2018

1. Jane borrows \$1043.00 from her parents. She pays back 74.50 a week.

A. Write a mathematical sentence to show how many weeks will it take to pay back her parents?

**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.

$$2\frac{1}{4} \div 1\frac{2}{3}$$

$$\frac{9}{4} \div \frac{5}{3}$$

$$\frac{9}{4} \times \frac{3}{5}$$

← Flipped

$$\frac{27}{20} \quad \left(1\frac{7}{20}\right)$$

$$-2\frac{2}{9} \div -\frac{1}{3}$$

$$-\frac{20}{9} \div -\frac{5}{3}$$

$$-\frac{20}{9} \times \frac{3}{5}$$

$$\frac{60}{45} = \frac{15}{45} \left( \frac{1}{3} \right)$$

$$-\frac{6}{5} \div 3\frac{1}{2}$$

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

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

$$-\frac{12}{35}$$



$$\begin{array}{r}
 -\frac{1}{6} - \frac{1}{2} + \frac{3}{8} \\
 \times 4 \quad \times 12 \quad \times 3 \\
 \frac{-2}{6} - \frac{6}{12} + \frac{9}{8} \\
 \frac{-28}{24} - \frac{12}{24} + \frac{33}{24} \\
 \frac{-7}{24}
 \end{array}$$

A.  $2\frac{3}{5} + \left(-\frac{1}{2}\right)$

$$\begin{array}{r} +2 \\ \cancel{x^2} \frac{13}{5} + \frac{-1 \times 5}{2 \times 5} \end{array}$$

$$\frac{26}{10} + \frac{-5}{10}$$

$$\frac{21}{10} \quad \textcircled{2\frac{1}{10}}$$

B.  $1\frac{2}{3} - \frac{7}{6}$

$$\begin{array}{r} +2 \\ \cancel{x^2} \frac{5}{3} - \frac{7}{6} \end{array}$$

$$\frac{10}{6} - \frac{7}{6}$$

$$\frac{3}{6} = \textcircled{\frac{1}{2}}$$

C.

$$-1\frac{8}{9} \div 3\frac{5}{7}$$

$$\begin{array}{r}
 -\frac{17}{9} \div \frac{26}{7} \\
 \downarrow \\
 -\frac{17}{9} \times \frac{7}{26} \\
 \hline
 \frac{-119}{234}
 \end{array}$$

D. 
$$-2\frac{1}{10} \times -\frac{1}{2}$$

$$\begin{array}{r}
 -\frac{21}{10} \times -\frac{1}{2} \\
 \hline
 \frac{21}{20} \quad | \frac{1}{20}
 \end{array}$$

$$5\frac{7}{10} \div -2\frac{1}{6} \times 6$$

$$\frac{57}{10} \div \frac{-13}{6} \times \frac{6}{1}$$

$$\frac{57}{10} \times \frac{-6}{13} \times \frac{6}{1}$$

$$\frac{-2052}{130} = -15\frac{102}{130}$$

$-15\frac{51}{65}$

**You must copy the question then answer.  
Express all answers in lowest terms and as  
mixed numbers when necessary!!!!!!**

Quotient: answer  
when divide.

**Page 127 - 128----- 7, 12, 14\***

1. a)  $\left(\frac{-1}{3}\right)\left(\frac{2}{5}\right)$   
 $\frac{-2}{15}$

product →  
the answer you  
get multiply

Answered  
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4 [a-f], 12

**Worksheet Even Ques. ONLY  
DO NOT MARK ON THE SHEET!!!**

## 1. Multiplying/Dividing Rational Number Practice

1, 2, 3, 4, 6

A, C, E, G

#1. a)  $\frac{35}{48}$  c)  $\frac{5}{16}$  e)  $\frac{2}{21}$  g)  $\frac{5}{9}$

#2. a)  $6\frac{2}{3}$  c)  $\frac{1}{3}$  e) 12 g)  $3\frac{1}{30}$

#3. a)  $\frac{3}{2}$  c)  $\frac{5}{12}$  e)  $\frac{11}{6}$  g)  $\frac{8}{21}$

#4. a)  $\frac{2}{3}$  c)  $\frac{10}{11}$  e)  $\frac{1}{9}$  g) 40

#6. a)  $3\frac{1}{3}$  c)  $2\frac{4}{9}$  e)  $6\frac{3}{8}$

g)  $3\frac{2}{55}$

\* Read

\* Work on other homework or

\* Continue to practice math using worksheets.

