

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...

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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

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

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

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

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

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

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

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

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

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

$$\begin{array}{r}
 -\frac{1}{6} - \frac{1}{2} + \frac{3}{8} \\
 \times 4 \quad \times 12 \quad \times 3 \\
 \frac{-2}{6} - \frac{1}{2} + \frac{11}{8} \\
 \frac{-28}{24} - \frac{12}{24} + \frac{33}{24} \\
 \frac{-2}{24}
 \end{array}$$

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

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

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

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

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

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

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

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

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.

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

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

**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*

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

$$\left(\frac{-2}{15}\right)$$

product →
the answer you
get multiply

*Answer
page 483*

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4 [a-f], 12

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.

