

Section 3.5

Section 3.5 Dividing Rational Numbers

Review

When dividing rational numbers, use the rules for dividing integers:

$\begin{array}{l} + \text{ and } + = + \\ - \text{ and } - = + \end{array} \right)$ same signs is POSITIVE

$\begin{array}{l} + \text{ and } - = - \\ - \text{ and } + = - \end{array} \right)$ opposite signs is NEGATIVE

Example 1: Divide the following.

a) $(-15) \div (-5)$

b) $\frac{-18}{9}$

c) $\frac{-138}{6}$

d) $(-5.1) \div 3$

e) $\frac{-7.5}{5}$

f) $(10.5) \div 0.25$

g) $(-20.4) \div (-6)$

h) $8.42 \div (-2)$

i) $(-0.24) \div (-0.03)$

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Example 2: Divide.

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

b) $\frac{3}{4} \div -\frac{9}{8}$

To divide fractions
you MULTIPLY by
the reciprocal.

c) $\frac{-2}{9} \div -\frac{4}{7}$

d) $2\frac{1}{2} \div \frac{25}{14}$

e) $\frac{8}{11} \div -4$

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

g) $16 \div \frac{-4}{5}$

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Example 3: Complete these multiplication and division word problems
Show your work!

a) A plane seats 480 people. If the plane is $\frac{3}{4}$ full, how many people are on board the plane?

b) If a car travels 12.5 km on 1 liter of fuel, how many liters of fuel does it take to travel 100 km?

c) There are 30 people in a row at the movies. How many people are in $5\frac{1}{2}$ rows?

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- d) The temperature drops 10.5°C over a 6 hour period. What was the hourly drop in temperature, assuming the temperature dropped the same amount each hour?
- e) Suppose you find $\frac{1}{3}$ of a pizza in the fridge and you eat $\frac{1}{2}$ of it. What fraction of the whole pizza did you eat?
- f) A tub contains 2.3 L of ice cream. It is shared equally among 5 people, how much does each person get?

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Example 4: A room measures 2.3 m by 3.4m.

a) What is the area of the room?

b) If carpet costs \$18.25/ m² , calculate the cost to carpet the room before taxes.

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