

Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

Student Friendly:
"Multiplying fractions and decimals "

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Try these out!

★ Don't forget to **ALWAYS** reduce if possible!

Use what you know about multiplying integers & fractions to evaluate the following expressions.

$$\left(\frac{7}{-4}\right) \times \frac{9}{2}$$

$$= -\frac{63}{8} = -7\frac{7}{8}$$

$$9 \times (-3)$$

$$= -27$$

$$\frac{9}{2} \times \left(\frac{-3}{10}\right)$$

$$= -\frac{27}{20} = -1\frac{7}{20}$$

$$(-1.5) \times (-1.8)$$

$$= 2.7$$

$$0.2 \times (-0.4)$$

$$= -0.08$$

$$\left(-\frac{8}{3}\right) \times \left(-\frac{6}{5}\right)$$

$$= \frac{48}{15} = \frac{16}{5}$$

$$= 3\frac{3}{15}$$

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

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Practice Questions

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Questions

3, 4, 5, 7

If you see decimals just use your calculator,
don't bother predicting answers.

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Multiplying Rational Numbers in Fraction Form

We should always try to reduce before we start the questions so we keep our numbers small

Determine the product:

$$\left(-\frac{11}{7}\right)\left(-\frac{21}{44}\right)$$

Look for common factors in the numerators and denominators.
11 and 44 have a common factor 11.
7 and 21 have a common factor 7.
Divide numerator and denominator by their common factors.

First, we simplify:

$$= \left(\quad \right) \left(\quad \right)$$



Then start multiplying

So, our new expression, looks like this:

=

= .

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Determine the product:

$$\left(\frac{\overset{1}{\cancel{11}}}{\underset{1}{\cancel{7}}} \right) \left(\frac{\overset{3}{\cancel{21}}}{\underset{4}{\cancel{44}}} \right)$$

First, we simplify:

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

$$= \frac{3}{4}$$

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$$\left(\frac{-9}{\cancel{5}_1} \right) \left(\frac{\cancel{45}_9}{4} \right)$$

$$\left(\frac{-9}{1} \right) \left(\frac{9}{4} \right)$$

$$= \frac{-81}{4} = -20 \frac{1}{4}$$

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| | |
|--|---|
| $\left(\frac{\overset{-4}{\cancel{-48}}}{\underset{3}{\cancel{15}}}\right) \left(\frac{\overset{7}{\cancel{35}}}{\underset{1}{\cancel{12}}}\right)$ $\left(\frac{-4}{3}\right) \left(\frac{7}{1}\right)$ $= \frac{-28}{3}$ $= -9\frac{1}{3}$ | $\left(\frac{\cancel{-48}}{\cancel{15}}\right) \left(\frac{35}{12}\right)$ $\left(\frac{\overset{4}{\cancel{-16}}}{\underset{1}{\cancel{5}}}\right) \left(\frac{\overset{7}{\cancel{35}}}{\underset{3}{\cancel{12}}}\right)$ $\left(\frac{-4}{1}\right) \left(\frac{7}{3}\right)$ $= \frac{-28}{3}$ $= -9\frac{1}{3}$ |
|--|---|

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$$\left(\frac{ab}{cd}\right) \left(\frac{c^2d}{ab^2}\right)$$

$$\left(\frac{\cancel{a}b}{\cancel{c}d}\right) \left(\frac{\cancel{c}c\cancel{d}}{\cancel{a}bb}\right)$$

$$= \frac{c}{b}$$

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Multiplying Rational Numbers in mixed number Form

Determine the product.

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



$$\left(\frac{8}{3}\right)\left(\frac{-7}{4}\right)$$

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

$$= \frac{-14}{3}$$

$$= -4\frac{2}{3}$$



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Multiplying Rational Numbers to Solve Problems



The price of a share in CIBC changed by $-\$1.57$ on March 4th, 2008.
Linda owns 43 shares.
By how much did Linda's shares change on that day?



The change in value is represented by this expression:
 $-\$1.57 \times 43$.

Use a calculator.

$$-\$1.57 \times 43 = -\$67.51$$

The shares lost $\$67.51$ that day.

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Practice Questions

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Questions

**4, 5ab, 7, 9ab, 11, 12, 14,15,
16ab**

Do not just write down answers show work.
You don't have to rewrite word problems but
for 11, 12 write out the questions (NOT JUST
THE ANSWERS)

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