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 "

Warm-Up

Evaluate the following expressions:

1) $-\frac{14}{7} + \frac{1}{5}$

$= \frac{-9}{5}$

2) $-12.45 + 6.24$

-6.21

3) $-\frac{5}{6} - \left(-\frac{4}{9}\right) - \frac{1}{2}$

$-\frac{8}{9}$

4) $\left(-\frac{6}{11}\right)\left(\frac{8}{7}\right)$

$-\frac{48}{77}$

Warm-Up

Evaluate the following expressions:

1) $-\frac{14}{7} + \frac{1}{5}$

$\times 5$ $\quad$ $\times 7$

$\frac{-70}{35} + \frac{7}{35}$

$= \frac{-63}{35}$

$= \boxed{\frac{-9}{5}}$

2) $-12.45 + 6.24$

$= -6.21$

3) $-\frac{5}{6} - \left(\frac{4}{9}\right) - \frac{1}{2}$

$\times 3$

$\frac{-15}{18} + \frac{8}{18} - \frac{1}{2}$

$\frac{-7}{18} - \frac{1}{2}$ $\quad \times 9$

$\frac{-7}{18} - \frac{9}{18}$

$= \frac{-16}{18}$

$= \frac{-8}{9}$

4) $\left(-\frac{6}{11}\right)\left(\frac{8}{7}\right)$

$= \frac{-48}{77}$

Try these out!

☆ Don't forget to ALWAYS reduce if possible!

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

$\left(\frac{7}{-4}\right) \times \frac{9}{2}$	$9 \times (-3)$	$\frac{9}{2} \times \left(\frac{-3}{10}\right)$
(-1.5) x (-1.8)	0.2 x (-0.4)	$\left(-\frac{8}{3}\right) \times \left(-\frac{6}{5}\right)$

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:

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

Then start multiplying

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

$$\left(\frac{-48}{15}\right)\left(\frac{35}{12}\right)$$

$$\left(\frac{-16}{5}\right)\left(\frac{35}{12}\right)$$

$$\left(\frac{-4}{1}\right)\left(\frac{7}{3}\right)$$

$$= \frac{-28}{3}$$

$$\left(\frac{-48}{315}\right)\left(\frac{35}{12}\right)$$

$$\left(\frac{-4}{3}\right)\left(\frac{7}{1}\right)$$

$$= -\frac{28}{3}$$

Multiplying Rational Numbers in mixed number Form

Determine the product.

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

Write the mixed numbers as improper fractions:

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

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

$\frac{-14}{3}$

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

$$\left(-4\tfrac{2}{7}\right)\left(-5\tfrac{2}{3}\right)$$

$$\left(\frac{-30}{7}\right)\left(\frac{-17}{3}\right)$$

$$\left(\frac{-10}{7}\right)\left(\frac{-17}{1}\right)$$

$$\frac{170}{7}$$

$$= 24\frac{2}{7}$$

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 x 43.

Use a calculator.

-$1.57 x 35 = - $67.51

The shares lost $67.51 that day.

Practice Questions
p. 127-129

Questions

3, 4, 5,7, 9, 11, 12, 14,15,

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)