Multiplying Rational Numbers

What rules do we use to multiply integers?

Indicate if the answer will be **negative** or **positive**. How do you know?

(-4) x 3 = negative

-

(-3) x (-6) = positive

2 x 8 = positive

When multiplying integers , we use the following rules

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(-) x (+) = (-)

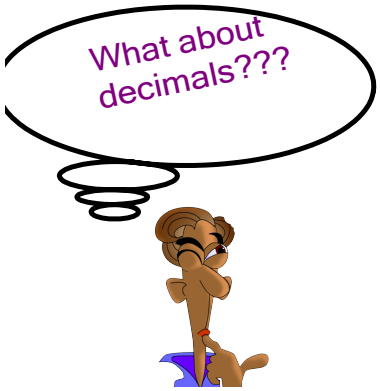
(-) x (-) = (+)

(+) x (+) = (+)

So, when the signs areopposite,
the product is negative

and

when the signs are the same,
the product is positive!



When we have decimals use a calculator!

Example 1	Example 2
0.7 x (-1.5)	(-1.45) x (-3.56)
-1.05	5.162

Now, let's take a look at Fractions.

What rules do we use to multiply fractions?

Evaluate the following expression.

How did you get your answer?

$$\frac{6}{5} \times \frac{8}{7} = \frac{6 \times 8}{5 \times 7} = \frac{48}{35}$$

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When multiplying fractions, we use this rule:

(top numbers)

Multiply the numerator by the numerator

then

Multiply the denominator by the denominator

bottom numbers

** Then, of course, REDUCE!! (if possible)

When we use brackets to write a product,
we do not need the multiplication sign!

We can write

$\frac{3}{2} \times \left(-\frac{1}{5}\right)$ as $\left(\frac{3}{2}\right)\left(-\frac{1}{5}\right)$

AND

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

Try these out!

☆ Don't forget to ALWAYS reduce if possible!

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

$\left(\frac{7}{-4}\right) \times \frac{9}{2}$ $\frac{63}{8}$	$9 \times (-3)$ (-27)	$\frac{9}{2} \times \left(\frac{-3}{10}\right)$ $\frac{-27}{20}$
(-1.5) x (-1.8) 2.7	0.2 x (-0.4) -0.08	$\left(-\frac{8}{3}\right) \times \left(-\frac{6}{5}\right)$ $\frac{48}{15}$

Practice Questions
p. 127-129

Questions

3, 4, 5, 7

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