



MATH WITH MR DJ

GRADE 7 · THE NUMBER SYSTEM

MULTIPLYING & DIVIDING RATIONAL NUMBERS

Today's goal: I can multiply rational numbers, divide rational numbers and multiply and divide rational numbers.



Tan



Digit



Blaze



Pi



Two problems, same numbers

1 $-6 \times (-4) = ?$

2 $-6 + (-4) = ?$

TURN & TALK

same answer, or different?



Multiplying & dividing

- 1 Same signs → POSITIVE.
- 2 Different signs → NEGATIVE.
- 3 Division follows the same rule — it is multiplying by the reciprocal.



BIG IDEA 2

24 and -10

1 $-6 \times (-4) = 24$. $-6 + (-4) = -10$.

REMEMBER

“Two negatives make a positive” is about MULTIPLYING. Not adding.



BIG IDEA 3

Why they differ

- 1 Multiplying by a negative REVERSES direction.
Reverse twice $\rightarrow$ forwards.
- 2 Adding a negative just keeps moving left.

REMEMBER

Owing \$6 four times over is a bigger debt, not a credit.



BIG IDEA 4

Count the negatives

- 1 EVEN count $\rightarrow$ positive. They pair off and cancel.
- 2 ODD count $\rightarrow$ negative. One is left unpaired.

REMEMBER

$(-2)(-3)(-4) = -24$. Three is odd.



Remember

- 1 Multiplying or dividing:** same signs $\rightarrow$ positive, different signs $\rightarrow$ negative.
- 2 Adding:** the number line decides, and two negatives stay negative.
- 3** Decide the sign first, then the size — it stops you carrying a sign error through the arithmetic.



Pick your pepper!

**MILD**Find -7×3 .

#1 on your practice sheet

**MEDIUM**Find $-36 \div 9$.

#4 on your practice sheet

**SPICY**

Find $(-2) \times (-3) \times (-4)$.
Then state a rule for the
sign of a product from how
many negatives it
contains.

#9 on your practice sheet

How's it going?



3 • Got it!

I could teach it



2 • Almost

One more example, please



1 • Not yet

I need some help

NOW YOU!

Practice sheet: everyone does Mild & Medium, then climb the peppers.

Stuck? Look back at Mr DJ's example at the top of the sheet.

Need it again? Step-by-step videos on YouTube @MathWithMrDJ

Brain break: 3 new daily puzzles at puzzles.mathwithmrdj.com

