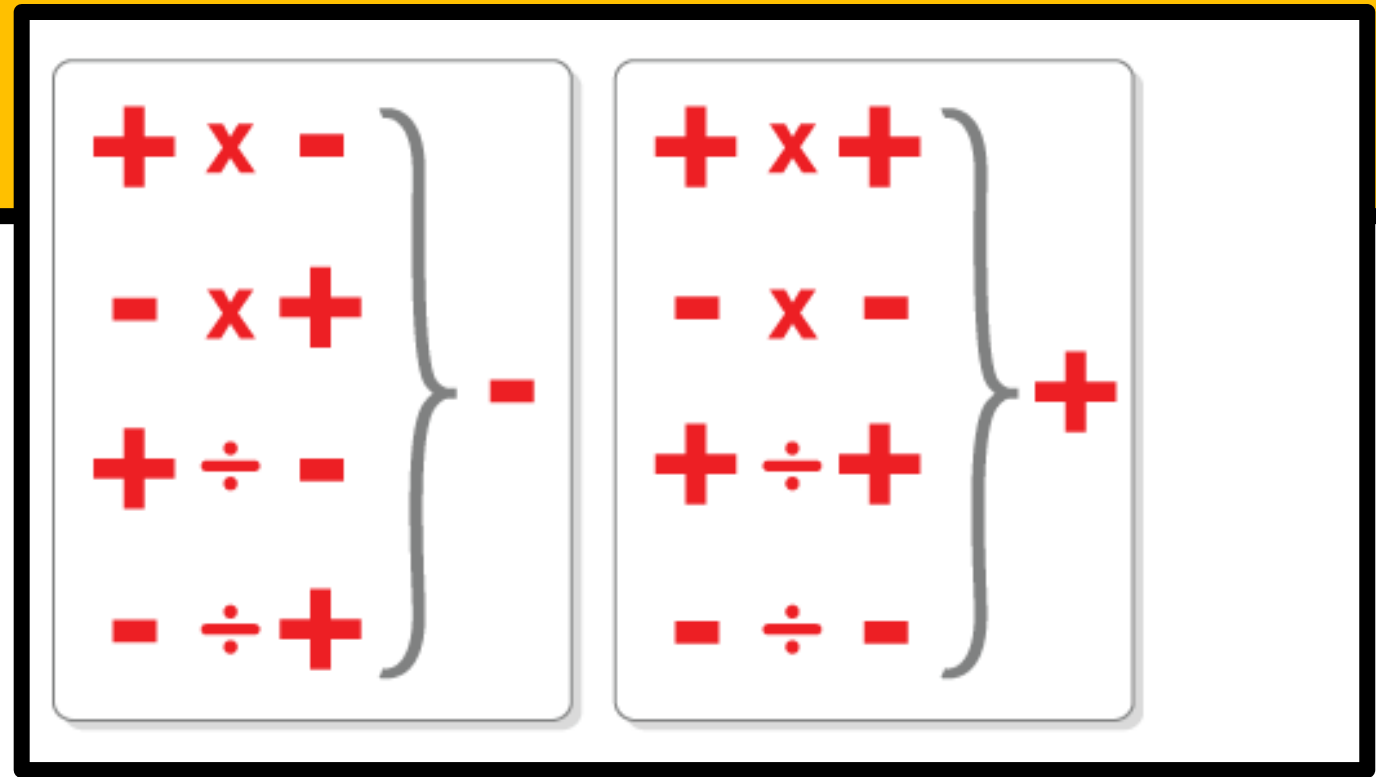


Math 6A Notes

1. Order of Operations
2. Negatives
3. Multiplication
4. Division



P	E	M	D	A	S
Parentheses	Exponents	Multiplication	Division	Addition	Subtraction
(....)	a^2	X	\div	+	-

Order of Operations

P	Parentheses	()	
E	Exponents	e^2	
M	Multiplication	\times	whichever comes first
D	Division	\div	Left Right M^{\times} D^{\div}
A	Addition	$+$	whichever comes first
S	Subtraction	$-$	Left Right A^{+} S^{-}

Please Excuse My Dear Aunt Sally

$$(5 + 3) \times 2 = 16$$

$$5 + (3 \times 2) = 11$$

ORDER

always work LEFT \rightarrow RIGHT

Parentheses $()$

Exponents x^3

PRACTICE:

$$3 + 7 \times 6 \div 3 =$$

$$3 + 42 \div 3 =$$

$$3 + 14 =$$

17

$$(6 \times 4) \div 3 - 6 + 2 =$$

$$24 \div 3 - 6 + 2 =$$

$$8 - 6 + 2 =$$

$$2 + 2 =$$

4

$$2^2 \times 9 \div 3 =$$

$$4 \times 9 \div 3 =$$

$$36 \div 3 =$$

12

Multiply \times

OR

Divide \div



P	Please	Parentheses
E	Excuse	Exponents
M	My	Multiply
D	Dear	Divide
A	Aunt	Addition
S	Sally	Subtraction

Addition $+$

OR

Subtraction $-$

Major Rule when Multiplying/Dividing Fractions

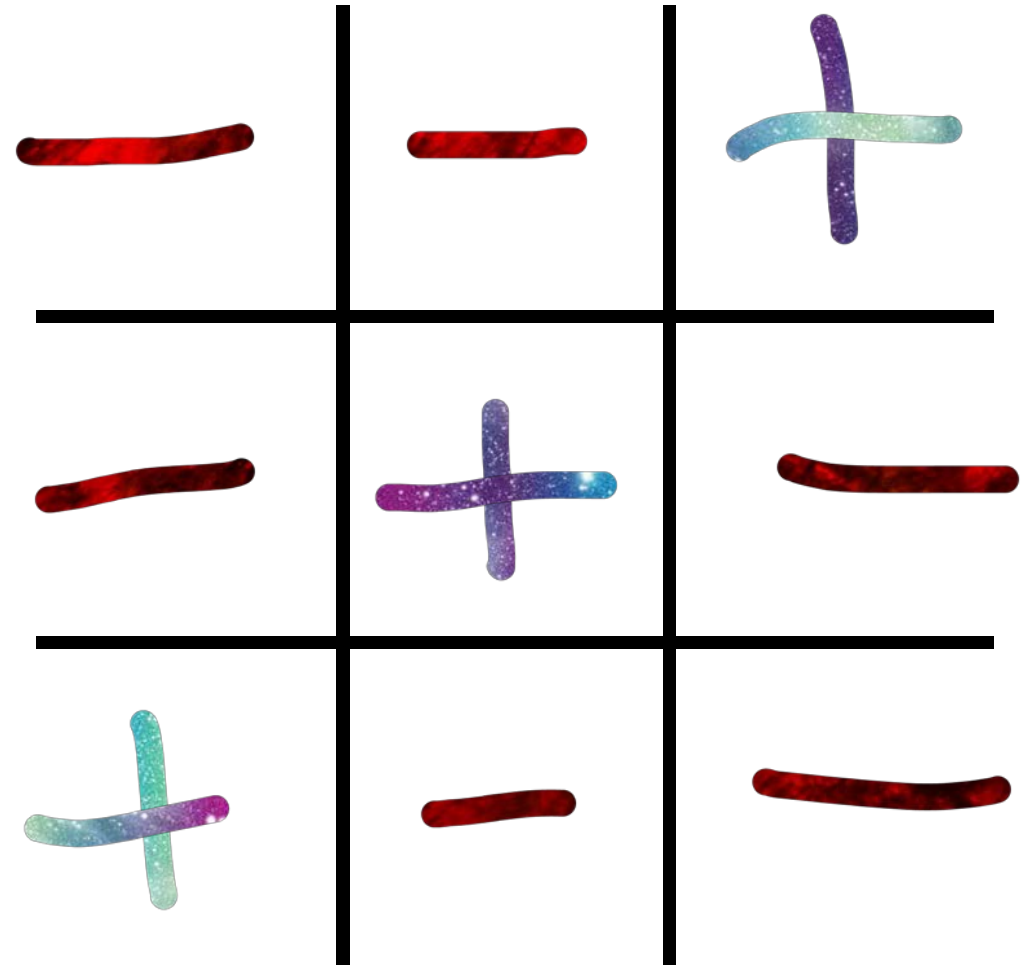
When multiplying or dividing +/- numbers

1. If they're both negative or positive then the answer is Positive

Example: $-3 \times -4 = +12$ or 12

1. If they're different signs (one + and one -) then the answer is Negative

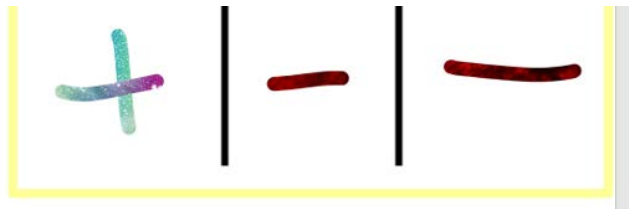
Multiplication and Division Rule	
Signs of Two Numbers	Sign of the Answer (Product or Quotient)
the same	positive (+)
different	negative (-)



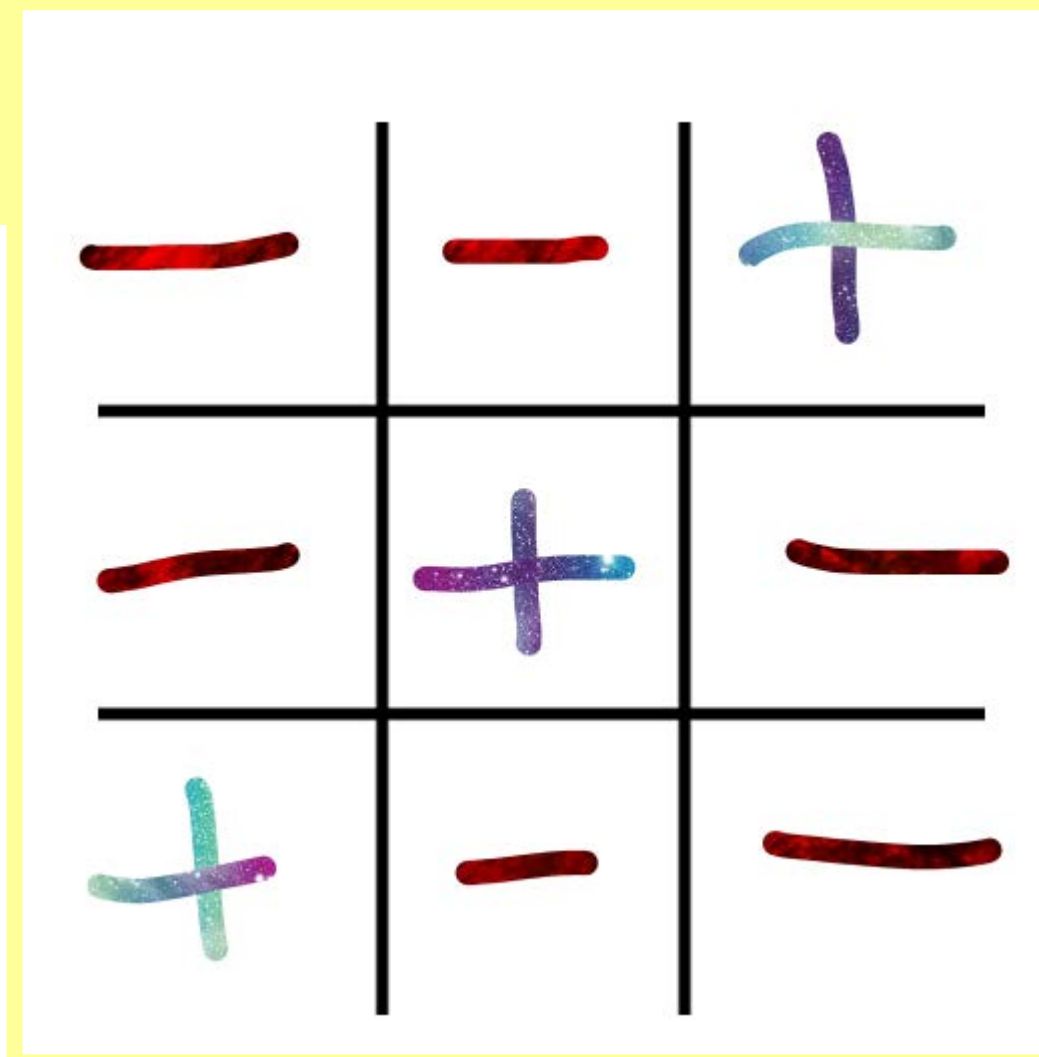
Wait, what was that?

- This is a way to visualize multiplication and division with +/- numbers.
- If you go in any direction you will have the two types of numbers (+ or -) and the result.

So, for instance



*A positive number mult/divided by a negative number = a negative number
(the signs were different)*



Extremely fun fact:

The direction can go in any order
(left, right, up, down, diagonal)
You'll get the correct sign every time

Multiplying Integers

Different signs:

Traditional 2×2

Dot $2 \cdot 2$

Parenthesis $(2)(2)$ or $2(2)$

Asterisk $2 * 2$

Multiplication and Division Rule

Signs of Two Numbers	Sign of the Answer (Product or Quotient)
the same	positive (+)
different	negative (-)

Practice:

1. $(-5) \times (-4)$

2. $8 \cdot -9$

3. $3(-4) + 4 \times 2$



Remember Order of Operations

Multiplying Integers

Different signs:

Traditional	2×2
Dot	$2 \cdot 2$
Parenthesis	$(2)(2)$ or $2(2)$
Asterisk	$2 * 2$

Multiplication and Division Rule	
Signs of Two Numbers	Sign of the Answer (Product or Quotient)
the same	positive (+)
different	negative (-)

Practice:

1. $(-5) \times (-4)$

+20 or 20

Putting + so
you know it's
not negative

2. $8 \cdot -9$

-72

3. $3(-4) + 4 \times 2$

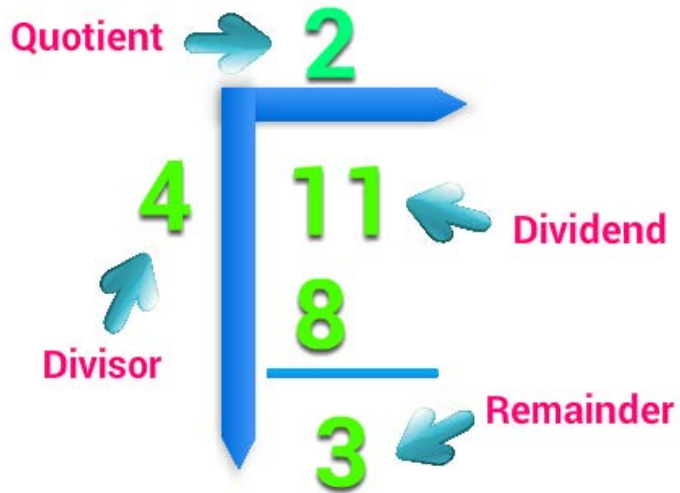
-12 + 4 x 2

-12 + 8

-4

Remember Order of Operations

Dividing Integers



Practice:

1. $35 \div 5$

2. $35 \div -7$

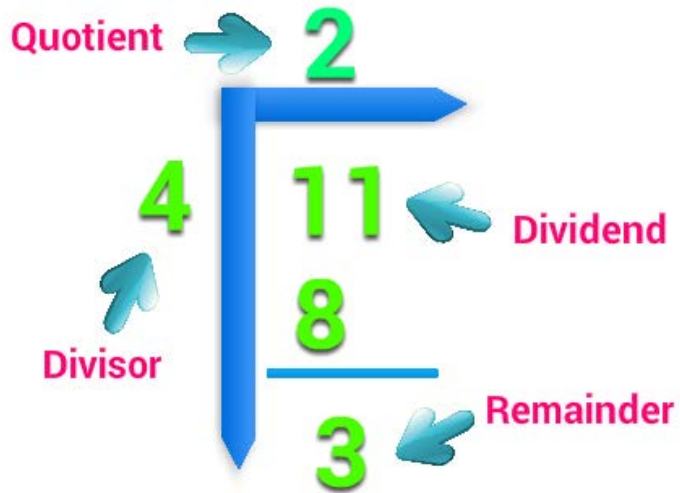
3. $24 \div 2(4)$

Multiplication and Division Rule

Signs of Two Numbers	Sign of the Answer (Product or Quotient)
the same	positive (+)
different	negative (-)

quotient
 $8 \div 2 = 4$
dividend divisor

Dividing Integers



Multiplication and Division Rule	
Signs of Two Numbers	Sign of the Answer (Product or Quotient)
the same	positive (+)
different	negative (-)

Practice:

1. $35 \div 5$

+7

2. $35 \div -7$

-5

3. $24 \div 2(4)$

12 (4)
48

quotient

$$8 \div 2 = 4$$

dividend

divisor

Remember to complete the quizizz

You can use *these notes* for guidance

Especially with **order of operations** and **seeing when numbers are negative**

There's also a help session during your class period today in case you need any assistance. Take advantage of this opportunity!