Real Numbers 0-2

Graph and Order Real Numbers

Writing Repeating Decimals as Fractions

SUM IT UP!!!
How will I remember?
Roots

EXAMPLES

$2 \cdot 2 = \sqrt{4} = $

SUM IT UP!!!

How will I remember?

EXAMPLES

$2 \cdot 2 \cdot 2 = \sqrt[3]{8} = $
A scuba diver swam...

down 25 feet
then down 10 feet
then up 5 feet
then down 50 feet
then up 65 feet
then down 45 feet
Where did he end up?

INTEGER
(positive and negative whole numbers &)

operations

Adding

Think: Adding two descents together goes even deeper. Adding two ascents together is rising even higher.

Same Sign
- the absolute values
- the common sign
- examples: $5 + 8 = \text{ rewrite}$
- $(-2) + (-3) = \text{ rewrite}$
- $\text{pos} + \text{pos} = \text{pos}$
- $\text{neg} + \text{neg} = \text{neg}$

Different Sign
- use the sign of the number with
- the absolute values
- examples: $5 + (-8) = \text{ rewrite}$
- $(-2) - 3 = \text{ rewrite}$
- $\text{pos} + \text{neg} = \text{neg}$

Subtracting

to an addition problem

HOW:
- Switch operation to + while changing sign of 2nd number to keep it equivalent.
- then using the addition rules to the left.

examples:
- $5 - (-8) = \text{ rewrite}$
- $(-2) - 3 = \text{ rewrite}$

Remember:

Another great analogy for understanding integers is money.

Think: Removing a recent descent is actually rising again, removing a recent ascent is the same as descending again.
Multiply or divide normally, but if both signs match, the answer will be the same. If they don’t, it will be the opposite.

Examples:

\[ (-4) \div 2 = \] 
\[ (-5) \cdot (-8) = \]


tfik: Multiple descents of the same depth work like repeatedly adding those negative movements. Ex: 3 descents of 6 meters each can be written: \[ 3 \cdot (-6) or (-6) + (-6) + (-6) \]

Example 1: 
\[ (-4) + (-16) = \]

Example 2: 
\[ 9 + (-12) = \]

Example 3: 
\[ (-24) \div (-3) = \]

Example 4: 
\[ 15 \cdot (-3) = \]

Example 5: 
\[ (-17) - 21 \text{ rewrite} \]

Example 6: 
\[ 4 - (-30) \text{ rewrite} \]

Example 7: 
\[ (-35) - (-40) \text{ rewrite} \]

Challenge:

\[ 3 + (-5) + 8 = \]
\[ (-2) + (-5) + (-4) = \]
\[ (-4)(5)(-1)(3) = \]
\[ 4 \cdot (-2)(-3)(-5) \cdot 2 = \]

Word Problem:

Alicia withdrew 45 dollars from her bank account. Later that day, she deposited $80, then wrote a check for $250. Last, she spent another $55 from the account while shopping with her direct debit card. What was her total gain or loss in funds from the account that day? Write an integer expression, then simplify.

Name:
Integer Operations 0-3

SUM IT UP!!!
How will I remember?
Vocabulary

\[ 3x^2 - x + 2 - 4x \]

Combining Like Terms

Like terms have the same \[ \text{___________} \] and the same \[ \text{___________} \].

"To Do" List

- Add invisible "+" signs.
- Add invisible "1" coefficients.
- Color like terms with matching patterns/colors.
- Color, doodle, & embellish key ideas!

Try It

Simplify.

1. \[ 3y - x - 6y + 1 + 12xy + 4 + xy \]
2. \[ 4ab - a^2 - 3a - b + a^2 - 2a - ab \]

To write an expression in standard form, order terms so that the \[ \text{___________} \] (power) decreases from left to right. Constants will be \[ \text{___________} \]. Variables should be in \[ \text{___________} \] order.
Combining like terms - Practice

Simplify each expression. Write each answer in standard form.

**Example 1**

\[3 - 5w + 12 + 2w - 3\]

**Example 2**

\[7 - 4j - 2j^2 - 5j^3 + j^2 - j\]

**Example 3**

\[4(x - 3) + x - (3x + 7)\]

**Example 4**

\[8a - a(b + 6) + 2b(a - b) + a\]
FRACTIONS

A fraction represents ____________________________.

In a proper fraction, _______________.

In an improper fraction, _______________.

(Shade below to represent the fraction $\frac{4}{7}$.)

-SIMPLIFYING-

To simplify a fraction, divide the _______________ and _______________ by ______________________________.

(Shade to represent that the simplest form is equivalent to the original.)

$\frac{16}{20} = \underline{\hspace{2cm}}$

-EQUIVALENT-

To write an equivalent fraction...

$\frac{6}{9} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Try it

For each fraction write the simplest form plus and one additional equivalent fraction.

Name:
Fraction Operations

Adding Fractions

Multiplying Fractions

Dividing Fractions

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