Math 7H - Unit 1b

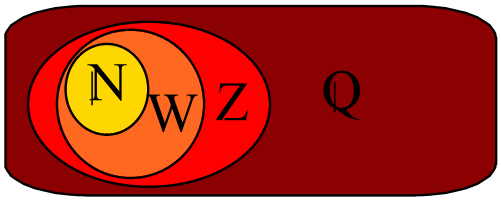
Day 9 - Writing Fractions as Decimals

Lesson Objectives:

- I know what the decimal form of a rational numbers look likes.
- I can convert a rational number to a decimal.

A number that can be written as a fraction is called a **rational number**. Rational numbers include whole numbers, integers, fractions, and some decimals.

Click on the stars in order to reveal how set of numbers relate to each other in a Venn Diagram.



Terminating decimals are rational numbers that can be written as a fraction with a denominator of 10, 100, 1000, and so on. When written as decimals, these rational numbers have an end or they "terminate" and DON'T go on forever.

0.5 $\frac{5}{10}$ 6.3247 $\frac{63247}{10000}$ 1235489.15678793251 $\frac{1235489156787932 51}{100000000}$

To write a fraction as a terminating decimal use LONG DIVISION.

$\frac{3}{8}$ → $8\overline{)3.000}$ → $\frac{3}{8} = 0.375$

$$\begin{array}{r} 0.375 \\ 8\overline{)3.000} \\ -24 \\ \hline 60 \\ -56 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

Rational numbers that are decimals that have digits repeating forever are called **repeating decimals**. You can use bar notation to indicate that a digit is repeating. The **period** of the repeating decimals is the digit or digits that repeat.

16.855555... $0.\overline{13}$ $19.\overline{1724}$

To write a fraction as a repeating decimal use LONG DIVISION. Look for a pattern!

$\frac{4}{33}$ → $33\overline{)4.00000}$ → $\frac{4}{33} = 0.\overline{12}$

$$\begin{array}{r} 0.1212... \\ 33\overline{)4.00000} \\ -33 \\ \hline 70 \\ -66 \\ \hline 40 \\ -33 \\ \hline 70 \\ -66 \\ \hline 4 \end{array}$$

To compare and order rational numbers, convert all numbers to the same form (DECIMAL with common denominator).

Replace the ■ with <, >, or = to make a true sentence.

$0.3 \blacksquare \frac{1}{3}$ $\frac{1}{4} \blacksquare \frac{1}{5}$ $\frac{5}{8} \blacksquare 0.65$

0.300 0.333... 0.25 0.20 $4 \div 5 = .8$ $5 \div 4 = 1.25$ 0.625 < 0.65

Order 7/8, 0.8, and 7/9 from least to greatest

0.875, 0.8, 0.777...

Homework

2.1 pg 54 #11-19, 28-33, 34a, 35-44, 47-52

* Individual Think Time *

What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...