

Mr. Northcutt's Math Classes Class Presentation

Friday, September 12, 2008 (9)



Math 1



Math 2



Applied Math

Math 1 – Daily Summary

- **Announcements**

- New Seating Chart Monday

- **Class Objectives**

- Comparing and Ordering Expressions/Numbers
- Absolute Value

- **Assignment**

- Lesson 1-3: 24-33, 35-41 ODD, 47-61 ODD, 68-76 EVEN

Classifying Numbers {Sets}

A number can belong to more than 1 set.

- **Natural Numbers** $\{1, 2, 3, 4, \dots\}$
- **Whole Numbers** $\{0, 1, 2, 3, 4, \dots\}$
- **Integers** $\{\dots, -2, -1, 0, 1, 2, \dots\}$
- **Rational Numbers** $\{\frac{p}{q}, \text{ where } p, q \text{ Integers}\}$
- **Irrational Numbers** **{Not Rational}**
- **Real Numbers (\mathbb{R})** **{Rational + Irrational}**

Number Line



Comparison

- **Given any two numbers what are the possible relationships between the numbers?**

7 and 3

-2.4 and -1

$\frac{1}{2}$ and 0.5

Inequalities

- An Inequality is a mathematical sentence that compares the values of two expressions.

$$a < b$$

$$a = b$$

$$a > b$$

$$a \leq b$$

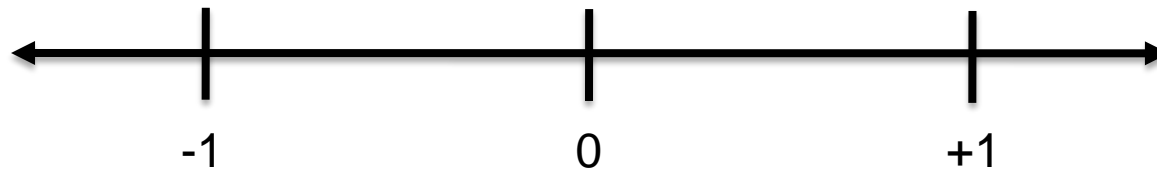
$$a \neq b$$

$$a \geq b$$

Example – Ordering Fractions

- Order the numbers from least to greatest.

$$-\frac{5}{6}, -\frac{1}{2}, \frac{2}{3}$$



Absolute Value

- The Absolute Value of a number is its DISTANCE from 0 on a number line.

- Absolute Value is a measure of size – **ALWAYS POSITIVE!**

$$|-5| \Rightarrow \text{"the absolute value of -5"} = 5$$

$$|-3.7| =$$

$$\left| \frac{2}{5} \right| =$$

Compare

$$|-12| \square |-11|$$

$$|17 - 5| \square |3 - 15|$$

Like "Grouping"
for Order of
Operations

Math 2 – Daily Summary

- **Announcements**

- Chapter 1 Test on Monday

- **Class Objectives**

- HW Review – I got 2 text messages asking for help!
- Chapter 1 Review – Inductive Reasoning
- Work on Take-Home Test

- **Assignment**

- Chapter 1 Take-Home Test (due Monday)

HW Solutions

1: $F(n) = n-3; 32$

2: $F(n) = n(n-1)/2; 595$

3: $F(n) = n(n-3)/2; 560$

4: $F(n) = n(n-1)/2; 595$

7: $F(n) = n(n-1)/2; 780; \text{Single Hub with 40 Lines}$

9: $F(n) = n(n-3)/2; 20$

10: $F(n) = n(n-3)/2; n-3 \text{ (\# of diagonals)} = 6 \text{ therefore } \underline{n=9}$

12: $F(n) = n(n-1)/2; 66 = n(n-1)/2 \text{ so } n(n-1)=132 \text{ so } \underline{n=12}$

15: $F(n) = (n+1)(3n-5); 1155 \text{ (VERY HARD!!!)}$

17: $F(n) = 2n+2 \text{ (Linear Sequence)}$

Chapter 1 Review

- **3 Steps of Inductive Reasoning**
 - Name Them...
- **Number, Letter & Picture Patterns**
 - Differences, Multiples, Primes, Perfect Squares,...
 - (1) Look, (2) Identify pattern and (3) Test your conjecture
 - **Activity:** Make Up – Candy if you stump the class!
- **Nth Term – Linear Sequences**
 - Linear Sequence: Common difference between terms
 - Form: $F(n) = m \cdot n \pm b$ (look familiar?)
- **Mathematical Modeling**
 - Sequence Tables and Pictures (dots and lines)

Applied Math – Daily Summary

- **Announcements**

- Move Forward 1 Row!

- **Class Objectives**

- Fractions
 - Numerator & Denominator
 - Equivalency & Simplification
 - Proper & Improper Fractions
 - Mixed Numbers

- **Assignment**

- Lesson 1.6: 25-30, 34-40, 45-50

Fraction

- A Fraction is the Ratio (division) of two Integers.

$$\frac{1}{3}$$

$$\frac{5}{13}$$

$$-\frac{7}{8}$$



Numerator



Denominator

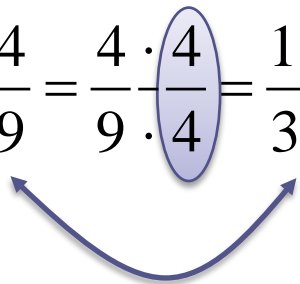
- Number of equal parts

- Denomination, or
- Size of equal parts

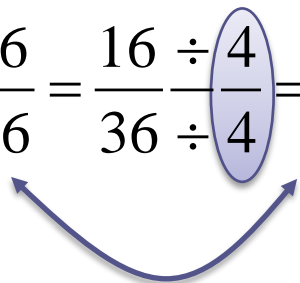
Equivalent Fractions

- Two fractions are Equivalent (equal) if either:

1. Multiplying the numerator and denominator of one fraction by the same number produces the other fraction.

$$\frac{4}{9} = \frac{4 \cdot 4}{9 \cdot 4} = \frac{16}{36}$$


2. Dividing the numerator and denominator of one fraction by the same number produces the other fraction.

$$\frac{16}{36} = \frac{16 \div 4}{36 \div 4} = \frac{4}{9}$$


Simplifying Fractions

- To Simplify a fraction means to find an Equivalent Fraction whose numerator and denominator are Relatively Prime

- Known as “Reducing a fraction to lowest terms”
- Relatively Prime: No Common Factors...Use Prime Factorization

$$\frac{35}{50} = \underline{\hspace{2cm}}$$

Special
Cases

$$\frac{5}{5} =$$

$$\frac{-3}{1} =$$

$$\frac{0}{(x+2)} =$$

$$\frac{9}{0} =$$

Improper Fractions & Mixed Numbers

- Proper Fraction: Numerator < Denominator
- Improper Fraction: Numerator \geq Denominator
- Mixed Number: Integer + Proper Fraction

$$\frac{5}{3} \quad \frac{1}{4} \quad 5\frac{3}{4}$$

- How do you turn an Improper Fraction into a Mixed Number? Mixed Number into an Improper Fraction?

$$\frac{13}{7} =$$

$$3\frac{2}{5} =$$