1.1 and 2 R1-2 - Set Notation; Number Categories; Order of Op.

Complex numbers: $a + bi$

- Real numbers: $\mathbb{R}$
  - Rational numbers: $\mathbb{Q}$ (fractions, $\frac{a}{b}$, $b \neq 0$)
  - Irrational numbers: $\mathbb{I}$ (decimals that don't end or repeat)
  - Square roots: $\sqrt{1} = 1$, $\sqrt{-k}$, $k > 0$

- Imaginary numbers: $i$
  - Square roots of negative numbers: $\sqrt{-1} = i$

- Complex numbers: $a + bi$

- Natural numbers: $\mathbb{N}$ (1, 2, 3, ...)
- Whole numbers: $\mathbb{W}$ (0, 1, 2, 3, ...)
- Integers: $\mathbb{Z}$ (..., -3, -2, -1, 0, 1, 2, 3, ...)

ASSIGNMENT: Identify the symbol of each set and match it with its description/illustration.
1. Complete a Venn Diagram of the Set of Complex Numbers. Include the following:
   - Complex Numbers of the form $a + bi$ where $a, b$ are members of \( \mathbb{R} \) Real Numbers and $i = \sqrt{-1}$.
   - Real Numbers: All rational and irrational numbers $a + bi$ where $a$ is a Real Number and $b = 0$.
   - Rational Numbers: $\frac{p}{q}$, where $p$ and $q$ are Integers and $q \neq 0$.
   - Integers: $\{..., -2, -1, 0, 1, 2, ...\}$
   - Whole Numbers $\{0, 1, 2, 3, \ldots\}$
   - Natural Numbers $\{1, 2, 3, \ldots\}$
   - Irrational Numbers: Numbers that cannot be written as the ratio of two integers; a real number that is not rational. $\sqrt{2}$, $\sqrt{7}$, $-\sqrt{10}$, 0.070070007... and so on.
   - Fraction
   - Imaginary Numbers: Numbers of the form $\sqrt{-k}$, where $k > 0$. $\sqrt{-7}$, $\sqrt{-9}$, $\sqrt{-0.25}$; $\sqrt{-1}i$ where $a = 0$: $i\sqrt{3}$, $-5i$, $\frac{3}{4}$.
Evaluate each using the values given.

22) \( \frac{pq}{6} \); use \( p = 9 \), \( q = 6 \), and \( r = 8 \)

\[
\frac{9 	imes 6}{6} = 9 
\]

23) \( 4 - x + z - x \); use \( x = 1 \), and \( z = 6 \)

\[
4 - 1 + 6 - 1 = 8 
\]

24) \( a - \left( c - \frac{a + 3}{5} \right) + 2 \); use \( a = 2 \), and \( c = 1 \)

\[
2 - \left( 1 - \frac{2 + 3}{5} \right) + 2 = 4 
\]

25) \( \frac{k - (j + h) + h}{2} + k \); use \( h = 2 \), \( j = 4 \), and \( k = 6 \)

\[
\frac{6 - (4 + 2) + 2}{2} + 6 = 7 
\]
Lesson PowerPoint: Sections R-1 to R-3

Book problems: R-1 page 11 #64 – 92 evens, and section R-2, pages 18-19, #8 – 88 evens

R.1-2 Categories of Numbers/Order of Operations
R.3 Exponent Rules (with KEY)
Book problems: R-3 page 31-33 #7-135 odds

**Folders DUE Friday, August 26 !! (ZAP begins next week :)

Contents: Syllabus
Pre-Test
Book problems R.1, 2
WS R.1-2
HW Check R.1-2
WS R.3
HW Check R.3

Review Assignment: Pre-Test #1-18

FRIDAY, August 26: Mid-Chapter TEST Chapter R 1-3

Lesson PowerPoint: Section R.4
What questions do you have over the assignment?

HOMEWORK QUIZ today!

Finish Pages: R-1 page 11 #63 - 91 odds, and section R-2, pages 18-19, #7 - 87 odds

Folders due THURSDAY Mid-Chapter Test FRIDAY

\[
x^2 - 2x - 3 = 0
\]

\[
(3)^2 - 2(3) - 3 = 0
\]

\[
\div 9 + 6 - 2 = 12
\]
Lesson PowerPoint: Sections R-1 to R-3

Book problems: R-1 page 11 #69 - 97 evens, and section R-2, pages 18-19, #8 - 88 evens

R.1-2 Categories of Numbers/Order of Operations
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Lesson PowerPoint: Section R-4
Factoring Practice: Worksheets R4.1 - R5.