NAME _____ DATE _____ PERIOD _____

4-4 Complex Numbers

What You'll Learn

Skim the lesson. Predict two things that you expect to learn based on the headings and the Key Concept box.

1. _____

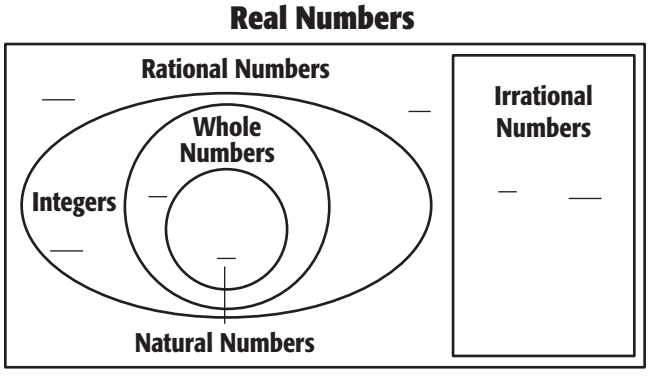
_____

2. _____

_____

Active Vocabulary

New Vocabulary Place each number in a box. All numbers should be used once: -4, 0, 5, $\frac{1}{2}$, π, $\sqrt{2}$, 0.5. *(Lesson 1-2)*



Vocabulary Link Match the term with its definition by drawing a line to connect the two.

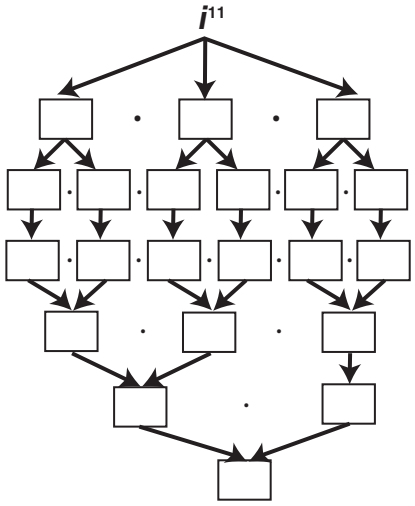
square root property	square root of a negative real number
complex conjugates	$\boldsymbol{i}$, which is defined as $\boldsymbol{i}^2 = -1$
imaginary unit	a property which says that if $x^2 = a$, then $x = \pm\sqrt{a}$
pure imaginary number	any number which can be written in the form $a + bi$, where a and b are real numbers and $\boldsymbol{i}$ is the imaginary unit
complex number	two complex numbers of the form $a + b\boldsymbol{i}$ and $a - b\boldsymbol{i}$

Lesson 4-4

Main Idea	Details

Pure Imaginary Numbers

Simplify the expression by completing each empty box.



Operations with Complex Numbers

Write each listed number under each category that applies.

$-7,\ 12i,\ 3 + 4i,\ \sqrt{-12},\ 0,\ 2 + i,\ i^5,\ \sqrt{5},\ \frac{2}{3},\ \frac{1}{2} + \frac{3}{2}i,\ -\frac{1}{3}i$

Complex	Real	Imaginary

Helping You Remember

How can you use what you know about the factors of a polynomial that is a difference of two squares to help you remember how to simplify fractions with imaginary numbers in the denominator?

_____

_____

_____