


Lesson Objectives (p. 382):

Vocabulary

 1. Complex plane (p. 382): _____

 2. Absolute value of a complex number (p. 382): _____

Key Concepts

3. Absolute Value of a Complex Number (p. 382):

| WORDS | ALGEBRA | NUMBERS | GRAPH |
|-------|---------|---------|-------|
| | | | |

**Lesson Objectives** (p. 382):

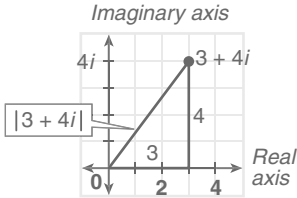
perform operations with complex numbers.

Vocabulary

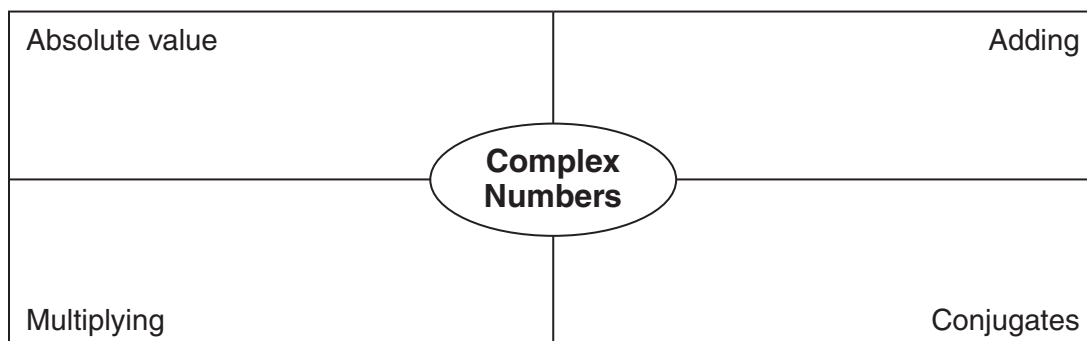
1. Complex plane (p. 382): a set of coordinate axes in which the horizontal axis represents real numbers and the vertical axis represents imaginary numbers.
2. Absolute value of a complex number (p. 382): the distance from the origin in the complex plane.

Key Concepts

3. Absolute Value of a Complex Number (p. 382):

| WORDS | ALGEBRA | NUMBERS | GRAPH |
|--|------------------------------------|--|--|
| The absolute value of a complex number $a + bi$ is the distance from the origin to the point (a, b) in the complex planer, and is denoted $ a + bi $. | $ a + bi $ $= \sqrt{a^2 + b^2}$ | $ 3 + 4i =$ $\sqrt{3^2 + 4^2} =$ $\sqrt{9 + 16} =$ $\sqrt{25} = 5$ |  $ 3 + 4i = \sqrt{3^2 + 4^2}$ $= \sqrt{9 + 16}$ $= 5$ |

4. Get Organized In each box, give an example. (p. 385).



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|--|---|
| <p>Absolute value</p> $ 3 + 4i = \sqrt{3^2 + 4^2}$ $= 5$ | <p>Adding</p> $(2 + 3i) + (4 + 5i) = 6 + 8i$ |
| <p>Complex Numbers</p> | |
| <p>Multiplying</p> $(2 + i)(4 + 2i) = 8 + 4i + 4i + 2i^2$ $= 6 + 8i$ | <p>The conjugate of $4 + 3i$ is $4 - 3i$.</p> <p>Conjugates</p> |