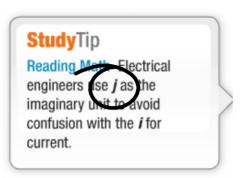
Algebra 2 4.4 Perform operations with imaginary numbers Perform operations with complex numbers radical simplify by "casting out pairs" square root property 2+51 real number Quiz 4.3-4.4 Fri. imaginary unit MCT 4.1-4.4 Tues. pure imaginary numbers complex numbers complex conjugate whiteboards speed dating



Complex numbers are used with electricity. In these problems, j usually represents the imaginary unit. In a circuit with alternating current, the voltage, current, and impedance, or hindrance to current, can be represented by complex numbers. To multiply these numbers, use the FOIL method.

Real-World Example 6 Multiply Complex Numbers



ELECTRICITY In an ΔC eirquit, the voltage V, current C, and impedance I are related by the formula $V = C \cdot I$. Find the voltage in a circuit with current 2 + 4j amps and impedance 9 - 3j ohms.

$$V = \frac{(-3)}{(-3)} (9-3)$$

$$V = \frac{18136}{18}$$

$$\frac{18136}{18}$$

$$\frac{18136}{18}$$

GuidedPractice

V=C.J

V = 120

6. Find the voltage in a circuit with current 2-4j amps and in -4j amps and in -4j alone 3-2j alone.

$$\frac{120}{2-4j} \cdot \frac{2+4j}{2+4j} = \frac{240+480j}{20} = \frac{240}{20} + \frac{480j}{20}$$

$$4-16jj = 4-16-1$$

