Do you remember what Real numbers are? Real numbers __________
__________________________________________________________.

Imaginary numbers ___________________________________________
__________________________________________________________.

Complex numbers (p. 494) _____________________________________
__________________________________________________________
__________________________________________________________.

We can perform the same operation on Complex numbers that we can on Real numbers.

Example 1: Simplify \((2 + 5i) + (-8 - i)\).

Example 2: Simplify \((9 + 6i) - (5 + i)\).

Example 3: Simplify \((1 + 3i)(2 + 4i)\).
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Example 4: Simplify \( \frac{4-3i}{2+i} \).

Complex numbers are necessary because they allow us to solve problems that we were unable to solve before.

Example 5: Solve \( x^2 - 7x + 15 = 0 \).
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An imaginary number is simplified only if its exponent is 1.

Example: Simplify $i^{50}$.

Example: Simplify $i^{41}$. 