Name _____   Date _____

Polynomial Identities as Complex Numbers - Step-by-Step Lesson

Rewrite as a complex number:

$x^2 + 9$

Explanation:

Complex numbers usually consist of three parts:

$$a + bi \longleftarrow \sqrt{-1}$$

↗ ↑

Real Part   **imaginary part**

$x^2 + 9$

$= x^2 - (\sqrt{-9})^2$ (Rationalize the whole number as a form of i)

$= x^2 - (\sqrt{-9})^2$ (Factor)

$= (x+3i)\ (x-3i)$

The answer is: $(x+3i)\ (x-3i)$.