1016-420-02
Complex Variables

In-Class Exercise

2012 November 27

NAME:

Using what you know about algebra, and the fact that $i^2 = -1$, write the following expressions in the form $a + bi$, where a and b are ordinary real numbers, i.e., write a real number (possibly zero or negative) in each box.

1. $$(1 + 2i) + (3 + i) = \left(\square\right) + \left(\square\right) i$$

2. $$(1 + 2i) - (3 + i) = \left(\square\right) + \left(\square\right) i$$

3. $$2(2 + i) = \left(\square\right) + \left(\square\right) i$$

4. $$(-3i)(2 + i) = \left(\square\right) + \left(\square\right) i$$

5. $$(2 - 3i)(2 + i) = \left(\square\right) + \left(\square\right) i$$

6.

$$(1-3i)(1+3i) = \left(\square\right) + \left(\square\right) i$$

7.

$$\frac{1+3i}{(1-3i)(1+3i)} = \left(\square\right) + \left(\square\right) i$$

8.

$$\frac{1+3i}{1+3i} = \left(\square\right) + \left(\square\right) i$$

9.

$$\frac{1}{1-3i} = \left(\square\right) + \left(\square\right) i$$