Lesson 7: Complex Number Division

Classwork

Opening Exercise

Perform the indicated operations. Write your answer in form. Identify the real part of your answer and the imaginary part of your answer.

Exercises

1. What is the multiplicative inverse of ?
2. Find the multiplicative inverse of .

State the conjugate of each number, and then using the general formula for the multiplicative inverse of , find the multiplicative inverse.

2. Show that and satisfy .

Problem Set

1. State the conjugate of each complex number. Then find the multiplicative inverse of each number, and verify by multiplying by and solving a system of equations.
2. Find the multiplicative inverse of each number, and verify using the general formula to find multiplicative inverses of numbers of the form .
3. Given and .
   1. Let . Find and the multiplicative inverse of .
   2. Show that the multiplicative inverse of is the same as the product of the multiplicative inverses of and .