

4.5U Skill Builder: Adding, Subtracting, and Multiplying Complex Numbers

Although this section does cover an expectation common to the Functions course, the section itself is intended for the Functions and Relations course only.

Specific Expectations

Unless otherwise stated each expectation is common to both the Functions and Relations course and the Functions courses.

- OC1.04 identify the structure of the complex number system and express complex numbers in the form $a + bi$, where $i^2 = -1$ (e.g., $4i$, $3 - 2i$);
- OC1.06U add, subtract, multiply, and divide complex numbers in rectangular form

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Time Required Functions and Relations:
75 min

Overview

- Add, subtract, and multiply complex numbers in the form $a + bi$.

Performing Operations with Complex Numbers

Students will easily master the new skills introduced in this section. Identifying conjugates prepares the way for dividing complex numbers and simplifying answers containing i^2 terms.

Management Options

Teacher Demonstration – Present a few carefully selected examples and point to the parallels between working with complex numbers and binomials. Allow students to practice adding, subtracting, and multiplying complex numbers.

Independent Work – Students can review the examples in the text to learn about adding, subtracting, or multiplying complex numbers. Allow time for practice and checking answers, which will help students retain ideas.

MANAGEMENT SUGGESTION

Create a game. Give each student a small — about 10-cm square — piece of paper, folded in half so that the paper looks like a gift card. Assign each student a letter, a, b, c, ... Each student should create a question and write it on the front of the card, including their assigned letter. Then they should write the

answer inside the card. At your signal, each student should exchange cards with someone else, attempt the question, open the card to check the answer, and note whether his or her response was correct. After five minutes, signal for students to exchange cards again, but this time, they should exchange cards with another student. Repeat these steps a few times.

Practise, Apply, Solve 4.5U Questions with a Functions and Relations Focus:

1–7, 10, 13–16

14. Check Your Understanding, p. 337 Management Suggestion

This question allows students to work through an example of each operation.

ASSESSMENT SUGGESTION

Knowledge and Understanding

Finish the class or begin the subsequent class with a short quiz that would be similar to the Check Your Understanding question. Put the quiz on the overhead.