Unit 3 Lesson 13: Multiplying Complex Numbers

1 i Squared (Warm up)

Student Task Statement

Write each expression in the form $a + bi$, where a and b are real numbers.

1. $4i \cdot 3i$
2. $4i \cdot -3i$
3. $-2i \cdot -5i$
4. $-5i \cdot 5i$
5. $(-5i)^2$

2 Multiplying Imaginary Numbers

Student Task Statement

Take turns with your partner to match an expression in column A with an equivalent expression in column B.

- For each match that you find, explain to your partner how you know it's a match.
- For each match that your partner finds, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.

A	B
$5 \cdot 7i$	-9
$5i \cdot 7i$	$35i$
$3i^2$	-35
$(3i)^2$	1
$8i^3$	9
i^4	-3
$-i^2$	-1
$(-i)^2$	$-8i$

3 Multiplying Complex Numbers

Student Task Statement

Write each product in the form $a + bi$, where a and b are real numbers.

1. $(-3 + 9i)(5i)$
2. $(8 + i)(-5 + 3i)$
3. $(3 + 2i)^2$
4. $(3 + 2i)(3 - 2i)$