Complex Numbers

Example Problems

April 28, 2020

Problem 1: Adding and Subtracting Complex Numbers

Add the complex numbers and express your answer in the form (a +bi)

$$(5 + 6i) - (12 + 4i)$$

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Add the complex numbers and express your answer in the form (a +bi)

$$(5 + 6i) - (12 + 4i)$$

$$=$$

$$-7 + 2i$$

Problem 2: Multiplying Complex Numbers

Multiply the complex numbers and express your answer in the form (a+bi)

$$(6i) \times (4 + 3i)$$

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$$(6i) \times (4 + 3i)$$

$$=$$

$$(6i)(4) + (6i)(3i)$$

Problem 2: Multiplying Complex Numbers

Multiply the complex numbers and express your answer in the form (a+bi)

$$(6i)(4) + (6i)(3i)$$

$$=$$

$$24i + 18i^2$$

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$$24i + 18i^2$$

$$=$$

$$24i + 18(-1)$$

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Multiply the complex numbers and express your answer in the form (a+bi)

$$24i + 18(-1)$$

$$=$$

$$-18 + 24i$$

Problem 3: Multiplying Complex Numbers Cont.

Multiply the complex numbers and express your answer in the form (a+bi)

$$(2 + 4i) \times (5 + 3i)$$

Problem 3: Multiplying Complex Numbers Cont.

Multiply the complex numbers and express your answer in the form (a+bi)

$$(2+4i) \times (5+3i)$$

$$=$$

$$(2)(5) + (2)(3i) + (4i)(5) + (4i)(3i)$$

Problem 3: Multiplying Complex Numbers Cont.

Multiply the complex numbers and express your answer in the form (a+bi)

$$(2)(5) + (2)(3i) + (4i)(5) + (4i)(3i)$$

$$=$$

$$10 + 6i + 20i + 12i^2$$

Problem 3: Multiplying Complex Numbers Cont.

Multiply the complex numbers and express your answer in the form (a+bi)

$$10 + 6i + 20i + 12(-1)$$

$$=$$

$$-2 + 26i$$

Congrats!

I hope you learned something and enjoyed this video!