

Operations with Complex Numbers Exit Quiz

Part A Instructions: Choose the option that completes the sentence or answers the question.

1. Which one of these cannot be written as a complex number?

- a. $2 + \sqrt{-1}$
- b. $\sqrt{34}$
- c. $\sqrt{-2}$
- d. None of these

2. Which one of these is true?

- a. $i^{20} = -i$
- b. $i^{19} = -i$
- c. $i^{10} = 1$
- d. None of these

3. $-8 + \sqrt{-25}$ written as a complex number is:

- a. $-8 - 5i$
- b. $-8 + 5i$
- c. $-8 + 5$
- d. None of these

4. The complex conjugate of $-1 + 2i$ is:

- a. $1 + 2i$
- b. $1 - 2i$
- c. $-1 - 2i$
- d. None of these

Part B Instructions: Answer the question below.

5. Simplify $\frac{-2}{3+i}$.

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Answers

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Part B Instructions: Answer the question below.

5. Simplify $\frac{-2}{3+i}$.

$$\begin{aligned} \frac{-2}{3+i} \times \frac{3-i}{3-i} &= \frac{-2(3-i)}{3^2-i^2} \\ &= \frac{-6+i}{9-(-1)} = \frac{-6+i}{10} = \frac{-6}{10} + \frac{i}{10} \\ &= \frac{-3}{5} + \frac{i}{10} \end{aligned}$$