

1. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{8}{-11} + 81i^2$$

- A. Irrational
 - B. Pure Imaginary
 - C. Rational
 - D. Nonreal Complex
 - E. Not a Complex Number
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2. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 12 \div 5 * 3 - (14 * 13)$$

- A. $[-169.8, -161.8]$
 - B. $[-42.6, -38.6]$
 - C. $[-171.2, -167.2]$
 - D. $[199.2, 204.2]$
 - E. None of the above
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3. Simplify the expression below and choose the interval the simplification is contained within.

$$14 - 18^2 + 4 \div 7 * 16 \div 20$$

- A. $[-310.18, -309.96]$
- B. $[-309.57, -309.3]$
- C. $[338.37, 338.53]$
- D. $[337.99, 338.44]$
- E. None of the above

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4. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{289}{81}}$$

- A. Whole
 - B. Irrational
 - C. Rational
 - D. Integer
 - E. Not a Real number
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5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 - 11i}{4 - 7i}$$

- A. $a \in [4, 6]$ and $b \in [4.5, 6]$
 - B. $a \in [1, 3]$ and $b \in [-7, -5]$
 - C. $a \in [291.5, 293.5]$ and $b \in [4.5, 6]$
 - D. $a \in [4, 6]$ and $b \in [332.5, 335]$
 - E. $a \in [13, 14]$ and $b \in [0.5, 2]$
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6. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1001}{7}} + \sqrt{119}i$$

- A. Pure Imaginary
- B. Nonreal Complex
- C. Irrational

- D. Rational
 - E. Not a Complex Number
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7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-10 + 7i)(3 - 4i)$$

- A. $a \in [-58, -55]$ and $b \in [-21, -13]$
 - B. $a \in [-30, -21]$ and $b \in [-29, -26]$
 - C. $a \in [-3, 2]$ and $b \in [58, 64]$
 - D. $a \in [-58, -55]$ and $b \in [19, 24]$
 - E. $a \in [-3, 2]$ and $b \in [-61, -59]$
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8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{63 + 33i}{-1 + 5i}$$

- A. $a \in [-64.5, -62.5]$ and $b \in [4.5, 7.5]$
 - B. $a \in [3, 4.5]$ and $b \in [-348.5, -347.5]$
 - C. $a \in [-10.5, -8.5]$ and $b \in [10, 12]$
 - D. $a \in [101, 102.5]$ and $b \in [-14, -13]$
 - E. $a \in [3, 4.5]$ and $b \in [-14, -13]$
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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-10 - 7i)(9 - 6i)$$

- A. $a \in [-134, -127]$ and $b \in [3, 8]$

- B. $a \in [-91, -85]$ and $b \in [38, 48]$
 - C. $a \in [-134, -127]$ and $b \in [-4, -1]$
 - D. $a \in [-51, -47]$ and $b \in [-133, -121]$
 - E. $a \in [-51, -47]$ and $b \in [122, 127]$
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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{23104}{361}}$$

- A. Irrational
 - B. Whole
 - C. Integer
 - D. Rational
 - E. Not a Real number
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