

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

$$-\sqrt{\frac{49}{64}}$$

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

$$(-2 + 4i)(-5 - 7i)$$

- A.  $a \in [-23, -12]$  and  $b \in [34, 39]$
  - B.  $a \in [3, 17]$  and  $b \in [-33, -21]$
  - C.  $a \in [30, 42]$  and  $b \in [-7, 3]$
  - D.  $a \in [-23, -12]$  and  $b \in [-37, -33]$
  - E.  $a \in [30, 42]$  and  $b \in [5, 7]$
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3. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-9 - 55i}{4 - 2i}$$

- A.  $a \in [-7.5, -6]$  and  $b \in [-11.5, -9.5]$
- B.  $a \in [3, 4]$  and  $b \in [-239, -237]$
- C.  $a \in [-3, -1]$  and  $b \in [26.5, 28]$
- D.  $a \in [73.5, 74.5]$  and  $b \in [-12.5, -11]$

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E.  $a \in [3, 4]$  and  $b \in [-12.5, -11]$

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4. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 7^2 + 13 \div 4 * 3 \div 18$$

- A.  $[-47.66, -47.17]$   
B.  $[-48.06, -47.92]$   
C.  $[50.53, 51.09]$   
D.  $[49.85, 50.46]$   
E. None of the above
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5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{6}} + \sqrt{10}i$$

- A. Irrational  
B. Rational  
C. Not a Complex Number  
D. Nonreal Complex  
E. Pure Imaginary
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6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{27 + 22i}{-8 + 7i}$$

- A.  $a \in [-3.75, -3.31]$  and  $b \in [2, 4]$   
B.  $a \in [-62.08, -61.8]$  and  $b \in [-4, -2]$

- C.  $a \in [-0.76, -0.45]$  and  $b \in [-4, -2]$   
D.  $a \in [-0.76, -0.45]$  and  $b \in [-366, -364.5]$   
E.  $a \in [-3.33, -3.24]$  and  $b \in [-0.5, 0.5]$
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7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{-720}{8}}$$

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

$$(-9 + 2i)(5 + 7i)$$

- A.  $a \in [-37, -27]$  and  $b \in [-76, -72]$   
B.  $a \in [-48, -44]$  and  $b \in [14, 23]$   
C.  $a \in [-62, -58]$  and  $b \in [51, 59]$   
D.  $a \in [-62, -58]$  and  $b \in [-55, -50]$   
E.  $a \in [-37, -27]$  and  $b \in [73, 75]$
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9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-2028}{13}} + \sqrt{0}i$$

- A. Nonreal Complex

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

$$20 - 4^2 + 1 \div 16 * 11 \div 5$$

- A.  $[35.77, 36.02]$
  - B.  $[36.1, 36.28]$
  - C.  $[4.12, 4.15]$
  - D.  $[3.99, 4.07]$
  - E. None of the above
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