

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

$$\sqrt{\frac{49}{169}}$$

- A. Rational
  - B. Not a Real number
  - C. Irrational
  - D. Integer
  - E. Whole
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2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{28224}{576}}$$

- A. Whole
  - B. Integer
  - C. Not a Real number
  - D. Rational
  - E. Irrational
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3. Simplify the expression below and choose the interval the simplification is contained within.

$$8 - 6 \div 15 * 9 - (3 * 18)$$

- A.  $[61.1, 65.2]$
- B.  $[-52.8, -48.7]$
- C.  $[-46.6, -45.8]$
- D.  $[19.8, 26.9]$
- E. None of the above

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

$$\frac{6}{-17} + 64i^2$$

- A. Nonreal Complex
  - B. Rational
  - C. Irrational
  - D. Pure Imaginary
  - E. Not a Complex 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.

$$\frac{9 - 88i}{-7 - 3i}$$

- A.  $a \in [-7, -5]$  and  $b \in [10, 10.5]$
  - B.  $a \in [-1.5, -0.5]$  and  $b \in [29, 30]$
  - C.  $a \in [2.5, 5]$  and  $b \in [641.5, 643.5]$
  - D.  $a \in [2.5, 5]$  and  $b \in [10.5, 11.5]$
  - E.  $a \in [200.5, 201.5]$  and  $b \in [10.5, 11.5]$
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6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-8 - 4i)(-9 + 6i)$$

- A.  $a \in [47, 51]$  and  $b \in [-87, -78]$
- B.  $a \in [94, 97]$  and  $b \in [9, 14]$
- C.  $a \in [69, 77]$  and  $b \in [-27, -22]$

D.  $a \in [94, 97]$  and  $b \in [-16, -10]$

E.  $a \in [47, 51]$  and  $b \in [84, 86]$

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7. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-9 + 33i}{8 - 6i}$$

A.  $a \in [-3.5, -1.5]$  and  $b \in [1.4, 2.45]$

B.  $a \in [1, 2]$  and  $b \in [2.8, 3.55]$

C.  $a \in [-3.5, -1.5]$  and  $b \in [209.55, 210.2]$

D.  $a \in [-270.5, -269.5]$  and  $b \in [1.4, 2.45]$

E.  $a \in [-2.5, -1]$  and  $b \in [-5.9, -4.95]$

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

$$2 - 6^2 + 10 \div 15 * 19 \div 3$$

A.  $[-33.78, -23.78]$

B.  $[-33.99, -32.99]$

C.  $[35.01, 41.01]$

D.  $[39.22, 45.22]$

E. None of the above

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

$$\frac{19}{-11} + 64i^2$$

A. Not a Complex Number

- B. Pure Imaginary
  - C. Nonreal Complex
  - D. Irrational
  - E. Rational
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10. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-6 - 7i)(-2 + 8i)$$

- A.  $a \in [12, 13]$  and  $b \in [-57, -54]$
  - B.  $a \in [-44, -38]$  and  $b \in [61, 64]$
  - C.  $a \in [68, 69]$  and  $b \in [-36, -26]$
  - D.  $a \in [68, 69]$  and  $b \in [33, 38]$
  - E.  $a \in [-44, -38]$  and  $b \in [-66, -59]$
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