

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

$$\frac{5}{-20} + \sqrt{-4}i$$

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

$$\frac{9 + 55i}{6 - 8i}$$

- A.  $a \in [0, 3]$  and  $b \in [-8, -6.5]$
  - B.  $a \in [4.5, 6]$  and  $b \in [2, 4]$
  - C.  $a \in [-4.5, -2.5]$  and  $b \in [3.5, 5.5]$
  - D.  $a \in [-386.5, -384.5]$  and  $b \in [3.5, 5.5]$
  - E.  $a \in [-4.5, -2.5]$  and  $b \in [401.5, 403.5]$
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3. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-2 - 6i)(10 + 3i)$$

- A.  $a \in [-5, 0]$  and  $b \in [65, 68]$
- B.  $a \in [-21, -15]$  and  $b \in [-19, -14]$
- C.  $a \in [-40, -36]$  and  $b \in [53, 55]$
- D.  $a \in [-40, -36]$  and  $b \in [-56, -50]$

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E.  $a \in [-5, 0]$  and  $b \in [-66, -60]$

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

$$\frac{36 - 88i}{1 - 6i}$$

- A.  $a \in [35, 36.5]$  and  $b \in [14.5, 15]$   
B.  $a \in [13.5, 15.5]$  and  $b \in [2.5, 4]$   
C.  $a \in [-13.5, -12]$  and  $b \in [-8.5, -8]$   
D.  $a \in [563.5, 565]$  and  $b \in [2.5, 4]$   
E.  $a \in [13.5, 15.5]$  and  $b \in [127.5, 129]$
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5. Simplify the expression below and choose the interval the simplification is contained within.

$$9 - 2 \div 15 * 19 - (13 * 12)$$

- A.  $[-148.01, -144.01]$   
B.  $[-154.53, -148.53]$   
C.  $[-82.4, -75.4]$   
D.  $[164.99, 169.99]$   
E. None of the above
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6. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{8100}{25}}$$

- A. Integer  
B. Not a Real number

- C. Whole
  - D. Irrational
  - E. Rational
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7. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$-\sqrt{\frac{625}{36}} + 36i^2$$

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

$$(-2 - 10i)(8 + 6i)$$

- A.  $a \in [-82, -71]$  and  $b \in [59, 75]$
  - B.  $a \in [36, 48]$  and  $b \in [-94, -86]$
  - C.  $a \in [-82, -71]$  and  $b \in [-70, -61]$
  - D.  $a \in [36, 48]$  and  $b \in [84, 98]$
  - E.  $a \in [-20, -15]$  and  $b \in [-65, -57]$
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9. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{11664}{324}}$$

- A. Whole

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

$$12 - 14 \div 1 * 19 - (3 * 9)$$

- A.  $[33.26, 42.26]$
  - B.  $[-22.74, -13.74]$
  - C.  $[-2316, -2310]$
  - D.  $[-283, -278]$
  - E. None of the above
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