

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

$$-\sqrt{\frac{3276}{14}}$$

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

$$-\sqrt{\frac{140625}{225}}$$

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

$$10 - 9^2 + 8 \div 13 * 14 \div 4$$

- A.  $[91.5, 94.1]$
- B.  $[-70.3, -67]$
- C.  $[89.1, 92.6]$
- D.  $[-72.7, -69.9]$
- E. None of the above

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

$$\sqrt{\frac{-1008}{12}} + \sqrt{63}$$

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

$$\frac{-27 - 11i}{-8 + 4i}$$

- A.  $a \in [1.8, 2.25]$  and  $b \in [194, 196.5]$
  - B.  $a \in [1.8, 2.25]$  and  $b \in [1.5, 3]$
  - C.  $a \in [3.35, 3.45]$  and  $b \in [-4, -1.5]$
  - D.  $a \in [171.65, 172.3]$  and  $b \in [1.5, 3]$
  - E.  $a \in [2.8, 3.3]$  and  $b \in [-1, 0]$
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6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-7 + 9i)(10 + 4i)$$

- A.  $a \in [-106, -98]$  and  $b \in [-62, -60]$
- B.  $a \in [-35, -24]$  and  $b \in [117, 121]$
- C.  $a \in [-35, -24]$  and  $b \in [-121, -117]$

- D.  $a \in [-73, -60]$  and  $b \in [35, 42]$   
E.  $a \in [-106, -98]$  and  $b \in [62, 66]$
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7. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-27 - 11i}{5 + 6i}$$

- A.  $a \in [-202.5, -200.5]$  and  $b \in [1.5, 2.5]$   
B.  $a \in [-6, -4]$  and  $b \in [-3, -1.5]$   
C.  $a \in [-3.5, -2]$  and  $b \in [106, 107.5]$   
D.  $a \in [-1.5, 0]$  and  $b \in [-5, -3]$   
E.  $a \in [-3.5, -2]$  and  $b \in [1.5, 2.5]$
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8. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 19^2 + 7 \div 11 * 4 \div 5$$

- A.  $[-343.57, -342.68]$   
B.  $[378.53, 379.29]$   
C.  $[379.25, 380.16]$   
D.  $[-342.59, -342.13]$   
E. None of the above
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9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{576}} + \sqrt{4}i$$

- A. Rational

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

$$(7 - 4i)(-5 + 3i)$$

- A.  $a \in [-25, -19]$  and  $b \in [40.51, 41.33]$
  - B.  $a \in [-25, -19]$  and  $b \in [-41.91, -40.51]$
  - C.  $a \in [-36, -32]$  and  $b \in [-12.77, -11.81]$
  - D.  $a \in [-49, -45]$  and  $b \in [-1.59, -0.39]$
  - E.  $a \in [-49, -45]$  and  $b \in [0.87, 1.51]$
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