

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

$$(-7 - 4i)(3 + 6i)$$

- A.  $a \in [3, 5]$  and  $b \in [-58, -47]$
  - B.  $a \in [-26, -18]$  and  $b \in [-24, -18]$
  - C.  $a \in [3, 5]$  and  $b \in [50, 61]$
  - D.  $a \in [-45, -42]$  and  $b \in [-31, -29]$
  - E.  $a \in [-45, -42]$  and  $b \in [27, 34]$
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2. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-390}{6}} + \sqrt{234}$$

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

$$6 - 7^2 + 1 \div 10 * 19 \div 4$$

- A.  $[-43.27, -42.62]$
- B.  $[54.92, 55.25]$
- C.  $[-42.81, -41.74]$
- D.  $[55.29, 56.16]$
- E. None of the above

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

$$-\sqrt{\frac{25}{121}} + 64i^2$$

- A. Pure Imaginary
  - B. Irrational
  - C. Rational
  - D. Not a Complex Number
  - E. Nonreal Complex
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5. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{6400}{64}}$$

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

$$-\sqrt{\frac{17}{0}}$$

- A. Whole
- B. Irrational
- C. Rational
- D. Integer

E. Not a Real 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.

$$\frac{-18 - 88i}{3 + 5i}$$

- A.  $a \in [-7, -5.5]$  and  $b \in [-18, -17]$   
B.  $a \in [-494.5, -493.5]$  and  $b \in [-5.5, -4.5]$   
C.  $a \in [-15, -14]$  and  $b \in [-5.5, -4.5]$   
D.  $a \in [10.5, 13]$  and  $b \in [-11, -9.5]$   
E.  $a \in [-15, -14]$  and  $b \in [-174.5, -172.5]$
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8. Simplify the expression below and choose the interval the simplification is contained within.

$$20 - 17^2 + 18 \div 13 * 16 \div 15$$

- A.  $[310.12, 310.92]$   
B.  $[-269.32, -268.77]$   
C.  $[308.47, 309.18]$   
D.  $[-268.2, -267.38]$   
E. None of the above
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9. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-72 - 11i}{-6 + 5i}$$

- A.  $a \in [376, 378]$  and  $b \in [6, 8]$   
B.  $a \in [5.5, 6.5]$  and  $b \in [425, 427.5]$

- C.  $a \in [5.5, 6.5]$  and  $b \in [6, 8]$
  - D.  $a \in [10.5, 13]$  and  $b \in [-3, -1.5]$
  - E.  $a \in [7.5, 8.5]$  and  $b \in [-5, -3.5]$
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10. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(7 + 3i)(2 - 9i)$$

- A.  $a \in [14, 20]$  and  $b \in [-34, -20]$
  - B.  $a \in [38, 43]$  and  $b \in [53, 59]$
  - C.  $a \in [-19, -10]$  and  $b \in [-72, -65]$
  - D.  $a \in [38, 43]$  and  $b \in [-59, -50]$
  - E.  $a \in [-19, -10]$  and  $b \in [66, 71]$
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