

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

$$\frac{9 + 44i}{-6 - 7i}$$

- A.  $a \in [2, 4]$  and  $b \in [-5, -3.5]$
  - B.  $a \in [-363.5, -361.5]$  and  $b \in [-3, -1.5]$
  - C.  $a \in [-5.5, -3]$  and  $b \in [-201.5, -200.5]$
  - D.  $a \in [-2, -0.5]$  and  $b \in [-7, -4.5]$
  - E.  $a \in [-5.5, -3]$  and  $b \in [-3, -1.5]$
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2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{6}{0}}$$

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

$$\sqrt{\frac{0}{529}} + \sqrt{4}i$$

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

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E. Irrational

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

$$(10 - 4i)(3 - 9i)$$

- A.  $a \in [30, 35]$  and  $b \in [34, 43]$
  - B.  $a \in [64, 68]$  and  $b \in [77, 84]$
  - C.  $a \in [-13, -5]$  and  $b \in [101, 103]$
  - D.  $a \in [-13, -5]$  and  $b \in [-104, -95]$
  - E.  $a \in [64, 68]$  and  $b \in [-80, -72]$
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5. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(10 - 8i)(-4 + 7i)$$

- A.  $a \in [12, 17]$  and  $b \in [94, 103]$
  - B.  $a \in [-43, -37]$  and  $b \in [-60, -48]$
  - C.  $a \in [-102, -94]$  and  $b \in [-40, -34]$
  - D.  $a \in [-102, -94]$  and  $b \in [36, 42]$
  - E.  $a \in [12, 17]$  and  $b \in [-103, -100]$
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6. Simplify the expression below and choose the interval the simplification is contained within.

$$8 - 6^2 + 5 \div 15 * 4 \div 13$$

- A.  $[-27.9, -27.84]$
- B.  $[43.98, 44.01]$
- C.  $[-28.02, -27.98]$

- D.  $[44.1, 44.19]$
- E. None of the above

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

$$-\sqrt{\frac{196}{169}} + 16i^2$$

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

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

$$3 - 20 \div 10 * 4 - (16 * 7)$$

- A.  $[110.5, 119.5]$
- B.  $[-121, -116]$
- C.  $[-110.5, -105.5]$
- D.  $[-147, -144]$
- E. None of the above

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

$$-\sqrt{\frac{1120}{10}}$$

- A. Irrational
- B. Rational

- C. Whole
  - D. Not a Real number
  - E. Integer
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10. 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.  $a \in [3.5, 4.5]$  and  $b \in [-5, -3.5]$
  - B.  $a \in [-5.5, -3.5]$  and  $b \in [-3, -1]$
  - C.  $a \in [385, 386.5]$  and  $b \in [-5, -3.5]$
  - D.  $a \in [-2.5, -0.5]$  and  $b \in [6, 8]$
  - E.  $a \in [3.5, 4.5]$  and  $b \in [-402.5, -401]$
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