

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

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

- A. $a \in [13, 21]$ and $b \in [-70, -58]$
 - B. $a \in [-70, -63]$ and $b \in [2, 14]$
 - C. $a \in [13, 21]$ and $b \in [65, 70]$
 - D. $a \in [-27, -26]$ and $b \in [-43, -38]$
 - E. $a \in [-70, -63]$ and $b \in [-10, -1]$
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2. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{154}}{19} + 3i^2$$

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

$$17 - 5 \div 10 * 2 - (13 * 15)$$

- A. $[-179.78, -178.41]$
- B. $[44.85, 45.3]$
- C. $[210.63, 212.51]$
- D. $[-178.61, -178.11]$
- E. None of the above

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

$$\frac{-4}{-19} + \sqrt{-36}i$$

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

$$-\sqrt{\frac{1456}{7}}$$

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

$$-\sqrt{\frac{-1870}{10}}$$

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

E. Not a Real number

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

$$\frac{-54 + 88i}{-4 - 5i}$$

- A. $a \in [12, 14]$ and $b \in [-18.5, -16.5]$
B. $a \in [-6, -4.5]$ and $b \in [-16, -14]$
C. $a \in [-224.5, -223.5]$ and $b \in [-16, -14]$
D. $a \in [15.5, 16.5]$ and $b \in [-3, -0.5]$
E. $a \in [-6, -4.5]$ and $b \in [-623.5, -621]$
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8. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 6 \div 8 * 4 - (15 * 19)$$

- A. $[-267.9, -266.2]$
B. $[-271.8, -269.1]$
C. $[-1, 2.4]$
D. $[302.4, 305]$
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.

$$\frac{-72 - 22i}{7 - i}$$

- A. $a \in [-9.9, -9.54]$ and $b \in [-227, -224.5]$
B. $a \in [-10.42, -10.19]$ and $b \in [20.5, 22.5]$

- C. $a \in [-482.38, -481.94]$ and $b \in [-6, -4]$
 - D. $a \in [-10.64, -10.47]$ and $b \in [-2, -1]$
 - E. $a \in [-9.9, -9.54]$ and $b \in [-6, -4]$
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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

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

- A. $a \in [38, 47]$ and $b \in [-4, 0]$
 - B. $a \in [14, 17]$ and $b \in [24, 30]$
 - C. $a \in [38, 47]$ and $b \in [0, 7]$
 - D. $a \in [-17, -10]$ and $b \in [39, 45]$
 - E. $a \in [-17, -10]$ and $b \in [-42, -38]$
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