

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

$$\frac{\sqrt{91}}{12} + 4i^2$$

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

$$(-8 + 9i)(10 + 2i)$$

- A. $a \in [-63, -56]$ and $b \in [106, 112]$
 - B. $a \in [-101, -97]$ and $b \in [71, 75]$
 - C. $a \in [-81, -75]$ and $b \in [16, 19]$
 - D. $a \in [-101, -97]$ and $b \in [-78, -68]$
 - E. $a \in [-63, -56]$ and $b \in [-109, -104]$
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3. Simplify the expression below and choose the interval the simplification is contained within.

$$19 - 11 \div 13 * 3 - (17 * 6)$$

- A. $[119.25, 120.99]$
- B. $[-86.05, -84.92]$
- C. $[-4.14, -2.99]$
- D. $[-84.79, -83.07]$
- E. None of the above

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

$$\frac{-54 - 33i}{1 + 4i}$$

- A. $a \in [-12.5, -10.5]$ and $b \in [10.5, 11.5]$
B. $a \in [-55.5, -53]$ and $b \in [-8.5, -7.5]$
C. $a \in [-187, -185.5]$ and $b \in [10.5, 11.5]$
D. $a \in [-12.5, -10.5]$ and $b \in [181.5, 183.5]$
E. $a \in [4, 6.5]$ and $b \in [-15.5, -14]$
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5. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1056}{8}}$$

- A. Whole
B. Rational
C. Not a Real number
D. Integer
E. Irrational
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6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{18 + 44i}{-7 + 6i}$$

- A. $a \in [-4.5, -2]$ and $b \in [6.5, 8]$
B. $a \in [0.5, 3]$ and $b \in [-5.5, -4.5]$
C. $a \in [0.5, 3]$ and $b \in [-417, -415]$

- D. $a \in [-5.5, -4.5]$ and $b \in [-3, -1]$
E. $a \in [137.5, 139]$ and $b \in [-5.5, -4.5]$
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7. Simplify the expression below and choose the interval the simplification is contained within.

$$10 - 12^2 + 17 \div 20 * 5 \div 9$$

- A. $[154.38, 154.75]$
B. $[-133.6, -133.17]$
C. $[153.79, 154.07]$
D. $[-134.22, -133.93]$
E. None of the above
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8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{0}{6\pi} + \sqrt{5}i$$

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

$$(8 + 10i)(-2 - 9i)$$

- A. $a \in [72, 80]$ and $b \in [-95.3, -90.7]$
B. $a \in [72, 80]$ and $b \in [90.7, 94.9]$

- C. $a \in [-107, -104]$ and $b \in [-53.1, -48.6]$
 - D. $a \in [-20, -11]$ and $b \in [-90.6, -89.3]$
 - E. $a \in [-107, -104]$ and $b \in [49.2, 52.2]$
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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{560}{8}}$$

- A. Rational
 - B. Irrational
 - C. Not a Real number
 - D. Whole
 - E. Integer
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