

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

$$\sqrt{\frac{3969}{81}}$$

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

$$(2 - 7i)(5 - 9i)$$

- A. $a \in [-56, -48]$ and $b \in [-57, -52]$
 - B. $a \in [4, 17]$ and $b \in [58, 66]$
 - C. $a \in [69, 75]$ and $b \in [-20, -12]$
 - D. $a \in [-56, -48]$ and $b \in [49, 57]$
 - E. $a \in [69, 75]$ and $b \in [16, 18]$
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3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 44i}{-7 - 5i}$$

- A. $a \in [-8.2, -7.75]$ and $b \in [-38.5, -37]$
- B. $a \in [-598.35, -597.5]$ and $b \in [-1.5, 0]$
- C. $a \in [-8.2, -7.75]$ and $b \in [-1.5, 0]$
- D. $a \in [-2.55, -1.6]$ and $b \in [-8.5, -7]$

E. $a \in [-7.8, -7.65]$ and $b \in [-10, -8.5]$

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

$$17 - 6^2 + 11 \div 10 * 16 \div 3$$

- A. $[-19.98, -17.98]$
B. $[-17.13, -12.13]$
C. $[53.02, 56.02]$
D. $[55.87, 60.87]$
E. None of the above
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5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{5}{-9} + 36i^2$$

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

$$\frac{9 - 44i}{2 + 7i}$$

- A. $a \in [-5.5, -4.5]$ and $b \in [-3.5, -1]$
B. $a \in [-290.5, -289.5]$ and $b \in [-3.5, -1]$

- C. $a \in [5.5, 7]$ and $b \in [-1, 1]$
D. $a \in [3.5, 5.5]$ and $b \in [-7.5, -6]$
E. $a \in [-5.5, -4.5]$ and $b \in [-151.5, -149.5]$
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7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{1176}{14}}$$

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

$$(-7 + 5i)(-4 + 2i)$$

- A. $a \in [16, 20]$ and $b \in [-37, -30]$
B. $a \in [37, 42]$ and $b \in [6, 8]$
C. $a \in [37, 42]$ and $b \in [-6, 1]$
D. $a \in [16, 20]$ and $b \in [29, 37]$
E. $a \in [26, 33]$ and $b \in [8, 16]$
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9. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1078}{0}} + \sqrt{182}i$$

- A. Not a Complex Number

- B. Nonreal Complex
 - C. Rational
 - D. Pure Imaginary
 - E. Irrational
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10. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 1 \div 8 * 20 - (15 * 6)$$

- A. $[3, 8]$
 - B. $[-72.01, -64.01]$
 - C. $[-76.5, -72.5]$
 - D. $[105.99, 111.99]$
 - E. None of the above
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