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

$$\sqrt{\frac{17424}{121}}$$

   A. Whole

   B. Not a Real number

   C. Integer

   D. Rational

   E. Irrational

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

$$(-6 - 2i)(4 - 7i)$$

   A. $a \in [-42, -33]$ and $b \in [-35, -32]$

   B. $a \in [-30, -18]$ and $b \in [12, 25]$

   C. $a \in [-10, -8]$ and $b \in [47, 53]$

   D. $a \in [-10, -8]$ and $b \in [-51, -42]$

   E. $a \in [-42, -33]$ and $b \in [33, 35]$

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

$$\sqrt{\frac{-1001}{7}} + \sqrt{182}$$

   A. Nonreal Complex

   B. Pure Imaginary

   C. Not a Complex Number

   D. Irrational

   E. Rational

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

$$\frac{-45 - 33i}{2 - i}$$

A. $a \in [-26, -24]$ and $b \in [-5, -3]$

B. $a \in [-57.5, -56]$ and $b \in [-23, -22]$

C. $a \in [-11.5, -11]$ and $b \in [-23, -22]$

D. $a \in [-23, -21.5]$ and $b \in [32, 34]$

E. $a \in [-11.5, -11]$ and $b \in [-111.5, -109.5]$

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

$$1 - 13 \div 4 * 11 - (20 * 16)$$

A. $[-876, -874]$

B. $[-355.75, -349.75]$

C. $[318.7, 322.7]$

D. $[-321.3, -311.3]$

E. None of the above

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

$$(2 + 9i)(-6 - 7i)$$

A. $a \in [45, 53]$ and $b \in [68, 69]$

B. $a \in [-76, -72]$ and $b \in [-41, -32]$

C. $a \in [-76, -72]$ and $b \in [39, 42]$

D. $a \in [-15, -7]$ and $b \in [-64, -62]$

E. $a \in [45, 53]$ and $b \in [-68, -64]$

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7. Choose the **smallest** set of Complex numbers that the number below belongs to.
$$\frac{\sqrt{65}}{7} + 6i^2$$

A. Nonreal Complex

B. Irrational

C. Rational

D. Not a Complex Number

E. Pure Imaginary

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8. Choose the **smallest** set of Real numbers that the number below belongs to.
$$\sqrt{\frac{116964}{361}}$$

A. Rational

B. Integer

C. Whole

D. Not a Real number

E. Irrational

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

$$5 - 14^2 + 9 \div 8 * 10 \div 3$$

A. $[-188.2, -185.5]$

B. $[200.9, 202.7]$

C. $[204.2, 206.8]$

D. $[-192.3, -187.6]$

E. None of the above

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

$$\frac{-63 + 11i}{-2 - 4i}$$

A. $a \in [3.5, 5]$ and $b \in [-274.5, -273.5]$

B. $a \in [8, 10.5]$ and $b \in [11, 12.5]$

C. $a \in [81, 83]$ and $b \in [-14, -13]$

D. $a \in [3.5, 5]$ and $b \in [-14, -13]$

E. $a \in [30.5, 32.5]$ and $b \in [-4.5, -2.5]$