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

$$\sqrt{\frac{36}{361}} + \sqrt{70}i$$

   A. Not a Complex Number

   B. Pure Imaginary

   C. Nonreal Complex

   D. Irrational

   E. Rational

---

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

$$13 - 17 \div 8 * 12 - (10 * 6)$$

   A. $[71.82, 75.82]$

   B. $[-136, -129]$

   C. $[-75.5, -65.5]$

   D. $[-50.18, -46.18]$

   E. None of the above

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

$$\sqrt{\frac{361}{529}}$$

   A. Irrational

   B. Not a Real number

   C. Rational

   D. Integer

   E. Whole

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

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

A. $a \in [-57, -45]$ and $b \in [-104, -100]$

B. $a \in [-109, -107]$ and $b \in [-40, -36]$

C. $a \in [-57, -45]$ and $b \in [97, 107]$

D. $a \in [-80, -75]$ and $b \in [26, 34]$

E. $a \in [-109, -107]$ and $b \in [33, 46]$

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

$$\frac{\sqrt{110}}{18} + 8i^2$$

A. Irrational

B. Rational

C. Pure Imaginary

D. Not a Complex Number

E. Nonreal Complex

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

$$(6 + 3i)(-9 + 4i)$$

A. $a \in [-44, -34]$ and $b \in [-51, -44]$

B. $a \in [-57, -50]$ and $b \in [9, 14]$

C. $a \in [-44, -34]$ and $b \in [45, 56]$

D. $a \in [-68, -65]$ and $b \in [-4, 0]$

E. $a \in [-68, -65]$ and $b \in [0, 8]$

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

$$-\sqrt{\frac{1386}{14}}$$

A. Not a Real number

B. Rational

C. Irrational

D. Whole

E. Integer

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

$$\frac{-18 - 88i}{-4 - 5i}$$

A. $a \in [4, 6]$ and $b \in [17, 18.5]$

B. $a \in [12, 13.5]$ and $b \in [5, 7.5]$

C. $a \in [510.5, 512.5]$ and $b \in [5, 7.5]$

D. $a \in [-9.5, -8.5]$ and $b \in [10, 13]$

E. $a \in [12, 13.5]$ and $b \in [261.5, 263]$

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

$$6 - 13^2 + 3 \div 15 * 18 \div 5$$

A. $[-162.9, -161.7]$

B. $[173.91, 175.11]$

C. $[-163.46, -162.96]$

D. $[175.1, 176.25]$

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.

$$\frac{-9 + 88i}{-7 - 6i}$$

A. $a \in [1, 2]$ and $b \in [-16, -14]$

B. $a \in [-465.5, -464.5]$ and $b \in [-8.5, -7.5]$

C. $a \in [-7, -4.5]$ and $b \in [-8.5, -7.5]$

D. $a \in [-7, -4.5]$ and $b \in [-670.5, -669.5]$

E. $a \in [6, 8]$ and $b \in [-7, -6]$
