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

$$-\sqrt{\frac{625}{49}}$$

A. Integer

B. Irrational

C. Not a Real number

D. Rational

E. Whole

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

$$\sqrt{\frac{81}{25}}$$

A. Whole

B. Not a Real number

C. Integer

D. Rational

E. Irrational

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

$$(-5 + 9i)(8 + 2i)$$

A. $a \in [-60, -51]$ and $b \in [-63, -59]$

B. $a \in [-60, -51]$ and $b \in [61, 68]$

C. $a \in [-23, -17]$ and $b \in [78, 86]$

D. $a \in [-23, -17]$ and $b \in [-87, -73]$

E. $a \in [-42, -34]$ and $b \in [12, 20]$

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

$$\frac{9 + 77i}{4 - 3i}$$

A. $a \in [1.5, 3.5]$ and $b \in [-26.5, -25]$

B. $a \in [-9.5, -6.5]$ and $b \in [13, 15]$

C. $a \in [10, 11]$ and $b \in [11, 12]$

D. $a \in [-9.5, -6.5]$ and $b \in [334.5, 336]$

E. $a \in [-195.5, -194.5]$ and $b \in [13, 15]$

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

$$\frac{-12}{12} + 25i^2$$

A. Not a Complex Number

B. Pure Imaginary

C. Nonreal Complex

D. Irrational

E. Rational

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

$$17 - 14 \div 20 * 9 - (3 * 19)$$

A. $[-47.3, -43.3]$

B. $[-44.08, -37.08]$

C. $[70.92, 75.92]$

D. $[142.3, 151.3]$

E. None of the above

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

$$17 - 10 \div 7 * 18 - (9 * 4)$$

A. $[-19.08, -17.08]$

B. $[-71.86, -66.86]$

C. $[-46.71, -43.71]$

D. $[49.92, 54.92]$

E. None of the above

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

$$\frac{-11}{-6} + 64i^2$$

A. Irrational

B. Not a Complex Number

C. Rational

D. Pure Imaginary

E. Nonreal Complex

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

$$(-3 + 8i)(6 + 4i)$$

A. $a \in [5, 15]$ and $b \in [-62.5, -59.6]$

B. $a \in [5, 15]$ and $b \in [58.5, 60.7]$

C. $a \in [-20, -12]$ and $b \in [29.1, 34.4]$

D. $a \in [-52, -44]$ and $b \in [-36.3, -35]$

E. $a \in [-52, -44]$ and $b \in [35.9, 37.1]$

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

$$\frac{54 - 88i}{7 + i}$$

A. $a \in [289.5, 291]$ and $b \in [-14, -11.5]$

B. $a \in [6.5, 8]$ and $b \in [-89, -87.5]$

C. $a \in [4, 7]$ and $b \in [-14, -11.5]$

D. $a \in [8.5, 11]$ and $b \in [-12, -10]$

E. $a \in [4, 7]$ and $b \in [-670.5, -669.5]$
