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

$$-\sqrt{\frac{13225}{529}}$$

A. Irrational

B. Integer

C. Rational

D. Not a Real number

E. Whole

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

$$\sqrt{\frac{1872}{12}} + \sqrt{154}i$$

A. Irrational

B. Pure Imaginary

C. Nonreal Complex

D. Rational

E. Not a Complex Number

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

$$-\sqrt{\frac{425}{5}}$$

A. Not a Real number

B. Integer

C. Irrational

D. Rational

E. Whole

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

$$1 - 9^2 + 10 \div 19 * 12 \div 15$$

A. $[-79.87, -79.02]$

B. $[-80.78, -79.83]$

C. $[81.56, 82.03]$

D. $[82.39, 82.81]$

E. None of the above

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

$$\frac{0}{-9\pi} + \sqrt{9}i$$

A. Not a Complex Number

B. Irrational

C. Rational

D. Nonreal Complex

E. Pure Imaginary

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

$$\frac{-9 + 44i}{-3 + 8i}$$

A. $a \in [-5, -3.5]$ and $b \in [-4, -2]$

B. $a \in [378.5, 379.5]$ and $b \in [-1.5, 0.5]$

C. $a \in [4.5, 6]$ and $b \in [-1.5, 0.5]$

D. $a \in [2.5, 3.5]$ and $b \in [5, 6.5]$

E. $a \in [4.5, 6]$ and $b \in [-60.5, -59.5]$

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

$$(10 - 6i)(5 - 8i)$$

A. $a \in [96, 102]$ and $b \in [-50.68, -49.98]$

B. $a \in [96, 102]$ and $b \in [49.72, 50.97]$

C. $a \in [-2, 7]$ and $b \in [109.01, 111.53]$

D. $a \in [49, 55]$ and $b \in [46.97, 49.25]$

E. $a \in [-2, 7]$ and $b \in [-110.1, -109.19]$

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

$$\frac{-18 - 55i}{-7 + 3i}$$

A. $a \in [-39.5, -38.5]$ and $b \in [6, 8]$

B. $a \in [4, 6]$ and $b \in [4.5, 6.5]$

C. $a \in [-2, 0]$ and $b \in [438.5, 439.5]$

D. $a \in [-2, 0]$ and $b \in [6, 8]$

E. $a \in [1.5, 3.5]$ and $b \in [-19, -18]$

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

$$1 - 6 \div 19 * 8 - (9 * 20)$$

A. $[-215, -209.8]$

B. $[-179.4, -177.7]$

C. $[179.4, 181.8]$

D. $[-185.5, -180.3]$

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.

$$(3 + 9i)(-2 + 8i)$$

A. $a \in [66, 69]$ and $b \in [42, 44]$

B. $a \in [66, 69]$ and $b \in [-45, -37]$

C. $a \in [-80, -77]$ and $b \in [5, 8]$

D. $a \in [-80, -77]$ and $b \in [-8, -4]$

E. $a \in [-10, -1]$ and $b \in [67, 77]$
