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

$$\sqrt{\frac{196}{529}} + 64i^2$$

A. Rational

B. Pure Imaginary

C. Nonreal Complex

D. Irrational

E. Not a Complex 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.

$$(8 - 7i)(3 + 6i)$$

A. $a \in [64, 71]$ and $b \in [23, 28]$

B. $a \in [-20, -15]$ and $b \in [-79, -67]$

C. $a \in [24, 30]$ and $b \in [-46, -37]$

D. $a \in [-20, -15]$ and $b \in [66, 73]$

E. $a \in [64, 71]$ and $b \in [-31, -22]$

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

$$1 - 7^2 + 14 \div 9 * 12 \div 16$$

A. $[48, 50.4]$

B. $[-47.1, -43.1]$

C. $[50.1, 51.7]$

D. $[-48.4, -47.8]$

E. None of the above

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

$$\frac{-36 - 88i}{5 - i}$$

A. $a \in [-11.5, -9]$ and $b \in [-16, -15]$

B. $a \in [-4.5, -2]$ and $b \in [-476.5, -475]$

C. $a \in [-8.5, -7]$ and $b \in [86.5, 89]$

D. $a \in [-93, -91]$ and $b \in [-19, -17.5]$

E. $a \in [-4.5, -2]$ and $b \in [-19, -17.5]$

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

$$-\sqrt{\frac{625}{529}}$$

A. Whole

B. Integer

C. Rational

D. Not a Real number

E. Irrational

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

$$\frac{-54 - 33i}{2 + 7i}$$

A. $a \in [2, 2.5]$ and $b \in [-9, -8]$

B. $a \in [-7.5, -6]$ and $b \in [5, 7]$

C. $a \in [-28.5, -26]$ and $b \in [-6, -4.5]$

D. $a \in [-7.5, -6]$ and $b \in [311, 313]$

E. $a \in [-340, -338.5]$ and $b \in [5, 7]$

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

$$1 - 12^2 + 6 \div 15 * 4 \div 16$$

A. $[-143.02, -142.97]$

B. $[145.07, 145.16]$

C. $[-142.92, -142.8]$

D. $[144.96, 145.02]$

E. None of the above

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

$$\frac{12}{-17} + 16i^2$$

A. Pure Imaginary

B. Not a Complex Number

C. Irrational

D. Nonreal Complex

E. Rational

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

$$(-6 - 3i)(2 + 10i)$$

A. $a \in [13, 19]$ and $b \in [-66, -64]$

B. $a \in [-43, -41]$ and $b \in [50, 59]$

C. $a \in [-43, -41]$ and $b \in [-57, -50]$

D. $a \in [-18, -5]$ and $b \in [-34, -26]$

E. $a \in [13, 19]$ and $b \in [66, 69]$

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

$$\sqrt{\frac{-1568}{14}}$$

A. Not a Real number

B. Irrational

C. Whole

D. Rational

E. Integer
