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

$$\sqrt{\frac{-3094}{0}}i + \sqrt{165}i$$

A. Rational

B. Nonreal Complex

C. Not a Complex Number

D. Irrational

E. Pure Imaginary

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

$$12 - 18 \div 11 * 15 - (8 * 4)$$

A. $[-45.55, -41.55]$

B. $[42.89, 48.89]$

C. $[-85.18, -75.18]$

D. $[-20.11, -16.11]$

E. None of the above

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

$$6 - 16 \div 20 * 10 - (19 * 5)$$

A. $[-109, -104]$

B. $[-90.08, -83.08]$

C. $[-102, -92]$

D. $[98.92, 107.92]$

E. None of the above

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

$$\sqrt{\frac{43681}{361}}$$

A. Integer

B. Rational

C. Not a Real number

D. Irrational

E. Whole

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

$$\frac{27 + 66i}{5 + 7i}$$

A. $a \in [-5, -3.5]$ and $b \in [6.5, 7.5]$

B. $a \in [596.5, 597.5]$ and $b \in [1, 4]$

C. $a \in [7, 9]$ and $b \in [140.5, 142]$

D. $a \in [4.5, 6]$ and $b \in [8, 10.5]$

E. $a \in [7, 9]$ and $b \in [1, 4]$

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

$$\sqrt{\frac{0}{196}} + \sqrt{6}i$$

A. Not a Complex Number

B. Pure Imaginary

C. Nonreal Complex

D. Rational

E. Irrational

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

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

A. $a \in [6, 9]$ and $b \in [-62, -57]$

B. $a \in [57, 70]$ and $b \in [-22, -11]$

C. $a \in [-55, -53]$ and $b \in [-46, -38]$

D. $a \in [57, 70]$ and $b \in [15, 27]$

E. $a \in [-55, -53]$ and $b \in [34, 49]$

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

$$\frac{-27 - 55i}{4 - 7i}$$

A. $a \in [-8, -7]$ and $b \in [-2, 0]$

B. $a \in [3.5, 5.5]$ and $b \in [-409.5, -407.5]$

C. $a \in [-7.5, -5.5]$ and $b \in [7, 8.5]$

D. $a \in [3.5, 5.5]$ and $b \in [-8, -5.5]$

E. $a \in [276.5, 278.5]$ and $b \in [-8, -5.5]$

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

$$(8 - 7i)(-10 + 9i)$$

A. $a \in [-145, -141]$ and $b \in [-2, 0]$

B. $a \in [-145, -141]$ and $b \in [1, 3]$

C. $a \in [-20, -8]$ and $b \in [-145, -139]$

D. $a \in [-20, -8]$ and $b \in [141, 146]$

E. $a \in [-85, -77]$ and $b \in [-71, -58]$

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

$$-\sqrt{\frac{50625}{81}}$$

A. Whole

B. Not a Real number

C. Integer

D. Irrational

E. Rational
