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

$$\sqrt{\frac{-315}{5}} + \sqrt{0}i$$

A. Nonreal Complex

B. Irrational

C. Not a Complex Number

D. Rational

E. Pure Imaginary

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

$$\sqrt{\frac{625}{441}} + 36i^2$$

A. Rational

B. Nonreal Complex

C. Pure Imaginary

D. Not a Complex Number

E. Irrational

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

$$19 - 7^2 + 9 \div 12 * 11 \div 18$$

A. $[-30.09, -29.92]$

B. $[67.82, 68.26]$

C. $[68.41, 68.66]$

D. $[-29.59, -28.91]$

E. None of the above

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

$$13 - 1 \div 6 * 19 - (8 * 12)$$

A. $[21.8, 22.31]$

B. $[-83.04, -81.13]$

C. $[-86.82, -85.92]$

D. $[108.47, 109.39]$

E. None of the above

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

$$(-6 + 5i)(-10 - 4i)$$

A. $a \in [74, 87]$ and $b \in [-26, -22]$

B. $a \in [59, 65]$ and $b \in [-25, -13]$

C. $a \in [74, 87]$ and $b \in [25, 28]$

D. $a \in [37, 45]$ and $b \in [-79, -72]$

E. $a \in [37, 45]$ and $b \in [72, 78]$

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

$$\sqrt{\frac{11664}{36}}$$

A. Irrational

B. Whole

C. Not a Real number

D. Integer

E. Rational

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

$$\frac{36 + 33i}{-7 + 8i}$$

A. $a \in [-5.3, -4.85]$ and $b \in [3, 5.5]$

B. $a \in [-0.4, 0.8]$ and $b \in [-519.5, -518.5]$

C. $a \in [-0.4, 0.8]$ and $b \in [-6, -4]$

D. $a \in [-4.85, -4.05]$ and $b \in [-0.5, 1.5]$

E. $a \in [11.85, 12.7]$ and $b \in [-6, -4]$

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

$$\sqrt{\frac{-1989}{9}}$$

A. Rational

B. Not a Real number

C. Integer

D. Irrational

E. Whole

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

$$\frac{54 - 44i}{-2 - 8i}$$

A. $a \in [243.5, 244.5]$ and $b \in [6, 9]$

B. $a \in [-28, -26.5]$ and $b \in [5, 7]$

C. $a \in [2.5, 4.5]$ and $b \in [519.5, 520.5]$

D. $a \in [2.5, 4.5]$ and $b \in [6, 9]$

E. $a \in [-7, -6.5]$ and $b \in [-5.5, -4.5]$

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

$$(5 - 3i)(-10 + 6i)$$

A. $a \in [-73, -67]$ and $b \in [-2, 1]$

B. $a \in [-55, -49]$ and $b \in [-21, -14]$

C. $a \in [-73, -67]$ and $b \in [-2, 1]$

D. $a \in [-35, -29]$ and $b \in [-62, -59]$

E. $a \in [-35, -29]$ and $b \in [58, 63]$
