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

$$\frac{13}{-7} + 9i^2$$

A. Pure Imaginary

B. Nonreal Complex

C. Not a Complex Number

D. Irrational

E. Rational

---

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

$$9 - 15^2 + 11 \div 4 * 14 \div 17$$

A. $[-216.12, -215.29]$

B. $[235.09, 236.38]$

C. $[-214.19, -213.5]$

D. $[231.73, 234.55]$

E. None of the above

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

$$\sqrt{\frac{130321}{361}}$$

A. Irrational

B. Not a Real number

C. Whole

D. Rational

E. Integer

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

$$(-5 - 6i)(-10 - 2i)$$

A. $a \in [33, 39]$ and $b \in [-76, -67]$

B. $a \in [54, 63]$ and $b \in [47, 54]$

C. $a \in [54, 63]$ and $b \in [-54, -47]$

D. $a \in [33, 39]$ and $b \in [70, 74]$

E. $a \in [47, 53]$ and $b \in [8, 17]$

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

$$\sqrt{\frac{0}{625}} + \sqrt{2}i$$

A. Not a Complex Number

B. Nonreal Complex

C. Irrational

D. Pure Imaginary

E. Rational

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

$$(6 + 7i)(-3 + 5i)$$

A. $a \in [-21, -16]$ and $b \in [33, 38]$

B. $a \in [-53, -51]$ and $b \in [4, 14]$

C. $a \in [13, 18]$ and $b \in [51, 53]$

D. $a \in [-53, -51]$ and $b \in [-13, -6]$

E. $a \in [13, 18]$ and $b \in [-53, -50]$

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

$$-\sqrt{\frac{81}{196}}$$

A. Integer

B. Rational

C. Not a Real number

D. Whole

E. Irrational

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

$$\frac{72 - 66i}{4 - 3i}$$

A. $a \in [485.5, 486.5]$ and $b \in [-4, -0.5]$

B. $a \in [17.5, 19]$ and $b \in [21.5, 22.5]$

C. $a \in [2, 4]$ and $b \in [-19.5, -19]$

D. $a \in [18.5, 20]$ and $b \in [-4, -0.5]$

E. $a \in [18.5, 20]$ and $b \in [-48.5, -47]$

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

$$7 - 9 \div 5 * 18 - (1 * 2)$$

A. $[-30.4, -24.4]$

B. $[-57.8, -45.8]$

C. $[2.9, 6.9]$

D. $[6.9, 13.9]$

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.

$$\frac{-27 + 22i}{-5 - 8i}$$

A. $a \in [-1.5, 1]$ and $b \in [-326.5, -325.5]$

B. $a \in [-42, -40.5]$ and $b \in [-4.5, -3]$

C. $a \in [4.5, 7]$ and $b \in [-3.5, -2.5]$

D. $a \in [-1.5, 1]$ and $b \in [-4.5, -3]$

E. $a \in [3, 5]$ and $b \in [0.5, 2]$
