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

$$\sqrt{\frac{990}{11}} + \sqrt{90}i$$

A. Pure Imaginary

B. Irrational

C. Nonreal Complex

D. Rational

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.

$$\frac{-36 + 77i}{3 - 6i}$$

A. $a \in [6.9, 8.7]$ and $b \in [9, 10.5]$

B. $a \in [-12.3, -11.45]$ and $b \in [-14, -12]$

C. $a \in [-12.9, -12.35]$ and $b \in [14.5, 15.5]$

D. $a \in [-12.9, -12.35]$ and $b \in [0, 1]$

E. $a \in [-570.35, -569.5]$ and $b \in [0, 1]$

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

$$(-5 - 3i)(-7 - 10i)$$

A. $a \in [30, 37]$ and $b \in [29.92, 30.33]$

B. $a \in [65, 66]$ and $b \in [28.37, 29.97]$

C. $a \in [0, 15]$ and $b \in [-71.23, -70.52]$

D. $a \in [0, 15]$ and $b \in [70.75, 71.19]$

E. $a \in [65, 66]$ and $b \in [-30.01, -27.46]$

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

$$\frac{3}{-8} + \sqrt{-16}i$$

A. Irrational

B. Not a Complex Number

C. Rational

D. Pure Imaginary

E. Nonreal Complex

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

$$(5 - 7i)(-4 - 3i)$$

A. $a \in [-46, -39]$ and $b \in [10, 15]$

B. $a \in [1, 2]$ and $b \in [35, 49]$

C. $a \in [1, 2]$ and $b \in [-45, -41]$

D. $a \in [-46, -39]$ and $b \in [-17, -10]$

E. $a \in [-26, -15]$ and $b \in [21, 24]$

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

$$\frac{63 - 44i}{8 + 5i}$$

A. $a \in [2.92, 3.33]$ and $b \in [-667.5, -666.5]$

B. $a \in [7.94, 8.27]$ and $b \in [-1.5, 0]$

C. $a \in [283.9, 284.21]$ and $b \in [-8, -6.5]$

D. $a \in [2.92, 3.33]$ and $b \in [-8, -6.5]$

E. $a \in [7.72, 7.88]$ and $b \in [-9, -8]$

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

$$7 - 19^2 + 9 \div 12 * 14 \div 1$$

A. $[375.5, 379.5]$

B. $[364.05, 371.05]$

C. $[-345.5, -341.5]$

D. $[-355.95, -352.95]$

E. None of the above

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

$$-\sqrt{\frac{-1232}{8}}$$

A. Rational

B. Whole

C. Not a Real number

D. Integer

E. Irrational

---

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

$$14 - 11^2 + 7 \div 1 * 2 \div 17$$

A. $[135.13, 135.44]$

B. $[-106.21, -105.91]$

C. $[-107.39, -106.46]$

D. $[135.74, 136.1]$

E. None of the above

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

$$\sqrt{\frac{194481}{441}}$$

A. Whole

B. Not a Real number

C. Integer

D. Rational

E. Irrational
