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

$$-\sqrt{\frac{1764}{14}} + 3i^2$$

A. Not a Complex Number

B. Rational

C. Irrational

D. Pure Imaginary

E. Nonreal Complex

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

$$19 - 3^2 + 11 \div 1 * 6 \div 13$$

A. $[13.2, 17.4]$

B. $[27.3, 28.8]$

C. $[30.9, 36]$

D. $[9.3, 11]$

E. None of the above

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

$$\frac{\sqrt{60}}{11} + \sqrt{-5}i$$

A. Nonreal Complex

B. Rational

C. Pure Imaginary

D. Not a Complex Number

E. Irrational

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

$$\frac{-9 - 44i}{-5 + 7i}$$

A. $a \in [-4.5, -2.5]$ and $b \in [3.5, 4]$

B. $a \in [-4.5, -2.5]$ and $b \in [282, 284.5]$

C. $a \in [4, 5.5]$ and $b \in [2, 3]$

D. $a \in [1.5, 2.5]$ and $b \in [-8, -6]$

E. $a \in [-264, -262.5]$ and $b \in [3.5, 4]$

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

$$\frac{-63 - 55i}{-2 - 8i}$$

A. $a \in [564.5, 567.5]$ and $b \in [-7, -3.5]$

B. $a \in [30, 32]$ and $b \in [6, 7.5]$

C. $a \in [-5.5, -4]$ and $b \in [8, 9.5]$

D. $a \in [7.5, 9]$ and $b \in [-396, -393]$

E. $a \in [7.5, 9]$ and $b \in [-7, -3.5]$

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

$$11 - 19^2 + 3 \div 7 * 13 \div 12$$

A. $[-349.54, -349.31]$

B. $[372.21, 372.49]$

C. $[371.92, 372.46]$

D. $[-350.27, -349.92]$

E. None of the above

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

$$(8 + 5i)(-7 - 10i)$$

A. $a \in [-57, -55]$ and $b \in [-51.6, -49.6]$

B. $a \in [-106, -104]$ and $b \in [44, 47.6]$

C. $a \in [-106, -104]$ and $b \in [-47.6, -42.1]$

D. $a \in [-8, -1]$ and $b \in [114.8, 116.5]$

E. $a \in [-8, -1]$ and $b \in [-116.5, -114.7]$

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

$$-\sqrt{\frac{455}{7}}$$

A. Integer

B. Rational

C. Whole

D. Irrational

E. Not a Real number

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

$$(6 + 9i)(10 - 8i)$$

A. $a \in [-16, -10]$ and $b \in [-140, -136]$

B. $a \in [129, 135]$ and $b \in [36, 43]$

C. $a \in [-16, -10]$ and $b \in [137, 145]$

D. $a \in [57, 65]$ and $b \in [-72, -69]$

E. $a \in [129, 135]$ and $b \in [-45, -40]$

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

$$-\sqrt{\frac{144}{169}}$$

A. Rational

B. Whole

C. Integer

D. Not a Real number

E. Irrational
