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

$$9 - 14 \div 15 * 19 - (16 * 11)$$

A. $[-277.07, -265.07]$

B. $[181.95, 185.95]$

C. $[-188.73, -180.73]$

D. $[-168.05, -156.05]$

E. None of the above

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

$$(-3 + 4i)(-10 - 7i)$$

A. $a \in [52, 62]$ and $b \in [14, 21]$

B. $a \in [2, 6]$ and $b \in [61, 69]$

C. $a \in [29, 33]$ and $b \in [-31, -24]$

D. $a \in [52, 62]$ and $b \in [-21, -17]$

E. $a \in [2, 6]$ and $b \in [-62, -51]$

---

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

$$\sqrt{\frac{-1210}{11}} + \sqrt{85}$$

A. Pure Imaginary

B. Irrational

C. Nonreal Complex

D. Rational

E. Not a Complex Number

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

$$\sqrt{\frac{12100}{484}}$$

A. Not a Real number

B. Rational

C. Integer

D. Irrational

E. Whole

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

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

A. $a \in [36.5, 38.5]$ and $b \in [8, 9.5]$

B. $a \in [-13.5, -12]$ and $b \in [4, 6.5]$

C. $a \in [-8, -5.5]$ and $b \in [-4, -1.5]$

D. $a \in [-0.5, 1]$ and $b \in [722.5, 724.5]$

E. $a \in [-0.5, 1]$ and $b \in [8, 9.5]$

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

$$10 - 15^2 + 14 \div 4 * 8 \div 16$$

A. $[-213.35, -211.36]$

B. $[234.26, 235.58]$

C. $[-217.03, -214.29]$

D. $[236.03, 238.16]$

E. None of the above

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

$$\frac{0}{18\pi} + \sqrt{5}i$$

A. Pure Imaginary

B. Irrational

C. Rational

D. Not a Complex Number

E. Nonreal Complex

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

$$-\sqrt{\frac{2805}{11}}$$

A. Integer

B. Irrational

C. Rational

D. Not a Real number

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.

$$(-10 - 2i)(7 - 9i)$$

A. $a \in [-88, -80]$ and $b \in [69, 82]$

B. $a \in [-53, -49]$ and $b \in [103, 105]$

C. $a \in [-53, -49]$ and $b \in [-105, -100]$

D. $a \in [-70, -66]$ and $b \in [15, 24]$

E. $a \in [-88, -80]$ and $b \in [-85, -71]$

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

$$\frac{-18 - 77i}{-1 + 4i}$$

A. $a \in [-17.5, -16.5]$ and $b \in [7, 10]$

B. $a \in [-290.5, -289.5]$ and $b \in [7, 10]$

C. $a \in [-17.5, -16.5]$ and $b \in [148.5, 149.5]$

D. $a \in [17.5, 18.5]$ and $b \in [-20, -19]$

E. $a \in [19, 20]$ and $b \in [-0.5, 1]$
