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

$$(-7 + 4i)(-5 + 10i)$$

A. $a \in [73, 81]$ and $b \in [49, 51]$

B. $a \in [73, 81]$ and $b \in [-56, -49]$

C. $a \in [-9, -1]$ and $b \in [-91, -82]$

D. $a \in [32, 41]$ and $b \in [32, 41]$

E. $a \in [-9, -1]$ and $b \in [86, 94]$

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

$$14 - 4 \div 12 * 17 - (5 * 16)$$

A. $[-80, -70]$

B. $[-71, -60]$

C. $[51, 59]$

D. $[87, 95]$

E. None of the above

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

$$\sqrt{\frac{1020}{12}} + 6i^2$$

A. Pure Imaginary

B. Nonreal Complex

C. Rational

D. Irrational

E. Not a Complex Number

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

$$\sqrt{\frac{22}{0}}$$

A. Integer

B. Not a Real number

C. Whole

D. Rational

E. Irrational

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

$$\frac{54 + 55i}{-2 - 4i}$$

A. $a \in [5, 13]$ and $b \in [-17, -15.6]$

B. $a \in [-22, -14]$ and $b \in [104.6, 109.5]$

C. $a \in [-22, -14]$ and $b \in [4.8, 7.8]$

D. $a \in [-33, -26]$ and $b \in [-14.2, -13.7]$

E. $a \in [-331, -322]$ and $b \in [4.8, 7.8]$