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

$$(-9 - 7i)(8 + 10i)$$

A. $a \in [-147, -138]$ and $b \in [-35, -33]$

B. $a \in [-147, -138]$ and $b \in [32, 41]$

C. $a \in [-4, 6]$ and $b \in [-149, -144]$

D. $a \in [-4, 6]$ and $b \in [143, 150]$

E. $a \in [-74, -67]$ and $b \in [-71, -66]$

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

$$\frac{27 - 22i}{-6 + 5i}$$

A. $a \in [-4.54, -4.48]$ and $b \in [-5.92, -4.35]$

B. $a \in [-272.01, -271.98]$ and $b \in [-0.78, 0.77]$

C. $a \in [-4.47, -4.44]$ and $b \in [-3.03, -2.73]$

D. $a \in [-4.47, -4.44]$ and $b \in [-0.78, 0.77]$

E. $a \in [-0.86, -0.83]$ and $b \in [2.8, 4.87]$

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

$$-\sqrt{\frac{20449}{121}}$$

A. Not a Real number

B. Irrational

C. Whole

D. Integer

E. Rational

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

$$\sqrt{\frac{880}{8}} + 4i^2$$

A. Rational

B. Irrational

C. Nonreal Complex

D. Not a Complex Number

E. Pure Imaginary

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

$$3 - 15^2 + 18 \div 10 * 19 \div 14$$

A. $[229.74, 231.65]$

B. $[227.53, 228.31]$

C. $[-220.44, -219.19]$

D. $[-222.27, -220.7]$

E. None of the above
