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

$$\sqrt{\frac{441}{256}}$$

A. Irrational

B. Not a Real number

C. Integer

D. Rational

E. Whole

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

$$\frac{-54 + 33i}{8 - i}$$

A. $a \in [-465.35, -464.5]$ and $b \in [2.5, 4.2]$

B. $a \in [-6.21, -5.3]$ and $b \in [4.4, 8.7]$

C. $a \in [-7.36, -6.96]$ and $b \in [2.5, 4.2]$

D. $a \in [-7.36, -6.96]$ and $b \in [209.6, 211.9]$

E. $a \in [-7.07, -6.29]$ and $b \in [-34.7, -31.8]$

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

$$\frac{0}{2\pi} + \sqrt{8}i$$

A. Nonreal Complex

B. Not a Complex Number

C. Rational

D. Irrational

E. Pure Imaginary

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

$$(4 - 8i)(2 + 6i)$$

A. $a \in [52, 62]$ and $b \in [-12, -4]$

B. $a \in [-42, -35]$ and $b \in [-42, -36]$

C. $a \in [7, 10]$ and $b \in [-57, -47]$

D. $a \in [52, 62]$ and $b \in [6, 11]$

E. $a \in [-42, -35]$ and $b \in [39, 42]$

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

$$10 - 15 \div 12 * 3 - (5 * 13)$$

A. $[16.2, 17.5]$

B. $[-57.1, -52.9]$

C. $[-60.3, -57.3]$

D. $[74.4, 74.8]$

E. None of the above
