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

$$-\sqrt{\frac{160000}{256}}$$

A. Rational

B. Whole

C. Irrational

D. Integer

E. Not a Real number

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

$$\frac{\sqrt{70}}{9} + \sqrt{-3}i$$

A. Nonreal Complex

B. Not a Complex Number

C. Rational

D. Irrational

E. Pure Imaginary

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

$$-\sqrt{\frac{765}{9}}$$

A. Rational

B. Whole

C. Irrational

D. Not a Real number

E. Integer

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

$$16 - 10^2 + 18 \div 1 * 7 \div 12$$

A. $[-76.5, -70.5]$

B. $[-84.79, -82.79]$

C. $[121.5, 130.5]$

D. $[114.21, 123.21]$

E. None of the above

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

$$-\sqrt{\frac{1260}{15}} + 2i^2$$

A. Rational

B. Irrational

C. Not a Complex Number

D. Nonreal Complex

E. Pure Imaginary

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

$$\frac{18 - 77i}{8 - i}$$

A. $a \in [220.5, 221.5]$ and $b \in [-9.65, -8.95]$

B. $a \in [0.5, 1.5]$ and $b \in [-10, -9.4]$

C. $a \in [3, 4.5]$ and $b \in [-9.65, -8.95]$

D. $a \in [1.5, 3]$ and $b \in [76.8, 77.05]$

E. $a \in [3, 4.5]$ and $b \in [-598.05, -597.7]$

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

$$(-2 + 9i)(8 - 3i)$$

A. $a \in [-44, -41]$ and $b \in [66, 69]$

B. $a \in [7, 17]$ and $b \in [-86, -72]$

C. $a \in [7, 17]$ and $b \in [76, 82]$

D. $a \in [-44, -41]$ and $b \in [-66, -59]$

E. $a \in [-20, -10]$ and $b \in [-29, -26]$

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

$$\frac{-45 - 11i}{4 - 8i}$$

A. $a \in [-11.5, -10.5]$ and $b \in [0, 2]$

B. $a \in [-1.5, -0.5]$ and $b \in [-405, -403]$

C. $a \in [-92.5, -91]$ and $b \in [-6, -4]$

D. $a \in [-1.5, -0.5]$ and $b \in [-6, -4]$

E. $a \in [-3.5, -2.5]$ and $b \in [3.5, 5.5]$

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

$$20 - 9^2 + 7 \div 1 * 10 \div 14$$

A. $[-64.95, -58.95]$

B. $[105, 109]$

C. $[-60, -50]$

D. $[100.05, 102.05]$

E. None of the above

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

$$(8 - 6i)(-2 + 3i)$$

A. $a \in [-37, -29]$ and $b \in [10, 14]$

B. $a \in [2, 6]$ and $b \in [32, 38]$

C. $a \in [-20, -14]$ and $b \in [-23, -16]$

D. $a \in [2, 6]$ and $b \in [-36, -33]$

E. $a \in [-37, -29]$ and $b \in [-17, -4]$
