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

$$-\sqrt{\frac{196}{289}}$$

A. Rational

B. Irrational

C. Whole

D. Not a Real number

E. Integer

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

$$\sqrt{\frac{35721}{441}}$$

A. Whole

B. Rational

C. Not a Real number

D. Irrational

E. Integer

---

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

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

A. $a \in [-83, -81]$ and $b \in [75, 82]$

B. $a \in [-51, -40]$ and $b \in [-107, -103]$

C. $a \in [-66, -59]$ and $b \in [18, 25]$

D. $a \in [-83, -81]$ and $b \in [-80, -69]$

E. $a \in [-51, -40]$ and $b \in [100, 105]$

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

$$\frac{18 + 55i}{4 + 6i}$$

A. $a \in [400.5, 402.5]$ and $b \in [1.5, 3.5]$

B. $a \in [6.5, 8]$ and $b \in [111.5, 113]$

C. $a \in [-6, -4]$ and $b \in [6, 7]$

D. $a \in [3, 6]$ and $b \in [8.5, 10]$

E. $a \in [6.5, 8]$ and $b \in [1.5, 3.5]$

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

$$\frac{-5}{2} + \sqrt{-16}i$$

A. Not a Complex Number

B. Irrational

C. Rational

D. Pure Imaginary

E. Nonreal Complex

---

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

$$19 - 6^2 + 20 \div 9 * 8 \div 5$$

A. $[56.6, 61.3]$

B. $[-19.2, -13.5]$

C. $[54.7, 57.5]$

D. $[-15, -12.5]$

E. None of the above

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

$$6 - 11 \div 2 * 7 - (1 * 12)$$

A. $[-51.5, -40.5]$

B. $[17.21, 24.21]$

C. $[-402, -401]$

D. $[-10.79, -1.79]$

E. None of the above

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

$$\frac{-20}{5} + \sqrt{-64}i$$

A. Nonreal Complex

B. Not a Complex Number

C. Rational

D. Irrational

E. Pure Imaginary

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

$$(9 - 3i)(8 + 4i)$$

A. $a \in [84, 85]$ and $b \in [-18, -7]$

B. $a \in [58, 65]$ and $b \in [-61, -56]$

C. $a \in [69, 73]$ and $b \in [-18, -7]$

D. $a \in [58, 65]$ and $b \in [55, 64]$

E. $a \in [84, 85]$ and $b \in [10, 17]$

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

$$\frac{63 - 66i}{2 - 4i}$$

A. $a \in [19, 20]$ and $b \in [5, 7]$

B. $a \in [19, 20]$ and $b \in [118.5, 120.5]$

C. $a \in [30.5, 33]$ and $b \in [16, 17]$

D. $a \in [-8, -6.5]$ and $b \in [-19.5, -18.5]$

E. $a \in [389.5, 390.5]$ and $b \in [5, 7]$
