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

$$-\sqrt{\frac{250000}{625}}$$

A. Rational

B. Not a Real number

C. Whole

D. Irrational

E. Integer

---

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

$$14 - 5 \div 15 * 20 - (19 * 9)$$

A. $[-159.02, -153.02]$

B. $[-167.67, -159.67]$

C. $[-105, -104]$

D. $[184.98, 185.98]$

E. None of the above

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

$$\sqrt{\frac{32400}{81}}$$

A. Whole

B. Rational

C. Not a Real number

D. Integer

E. Irrational

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

$$\frac{-63 + 11i}{3 - 5i}$$

A. $a \in [-22, -20.5]$ and $b \in [-2.5, -0.5]$

B. $a \in [-5, -3]$ and $b \in [9.5, 11]$

C. $a \in [-7.5, -7]$ and $b \in [-282.5, -281]$

D. $a \in [-7.5, -7]$ and $b \in [-10, -7]$

E. $a \in [-245.5, -243]$ and $b \in [-10, -7]$

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

$$\frac{27 + 44i}{6 - 2i}$$

A. $a \in [73, 74.5]$ and $b \in [7, 8.5]$

B. $a \in [5.5, 7]$ and $b \in [3.5, 6.5]$

C. $a \in [0.5, 2.5]$ and $b \in [317.5, 319.5]$

D. $a \in [3, 5]$ and $b \in [-22.5, -20.5]$

E. $a \in [0.5, 2.5]$ and $b \in [7, 8.5]$

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

$$8 - 1^2 + 12 \div 15 * 18 \div 14$$

A. $[7.42, 8.89]$

B. $[8.79, 9.57]$

C. $[6.4, 7.59]$

D. $[9.85, 10.53]$

E. None of the above

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

$$\frac{\sqrt{221}}{10} + \sqrt{-5}i$$

A. Rational

B. Nonreal Complex

C. Pure Imaginary

D. Irrational

E. Not a Complex Number

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

$$(5 - 9i)(-7 + 10i)$$

A. $a \in [54, 61]$ and $b \in [-119, -111]$

B. $a \in [-128, -122]$ and $b \in [11, 19]$

C. $a \in [-128, -122]$ and $b \in [-13, -7]$

D. $a \in [54, 61]$ and $b \in [106, 114]$

E. $a \in [-38, -33]$ and $b \in [-93, -85]$

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

$$\sqrt{\frac{-720}{0}}i + \sqrt{208}i$$

A. Rational

B. Nonreal Complex

C. Irrational

D. Not a Complex Number

E. Pure Imaginary

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

$$(-2 - 9i)(-4 + 8i)$$

A. $a \in [76, 85]$ and $b \in [10, 22]$

B. $a \in [-64, -61]$ and $b \in [48, 56]$

C. $a \in [76, 85]$ and $b \in [-23, -13]$

D. $a \in [3, 14]$ and $b \in [-76, -70]$

E. $a \in [-64, -61]$ and $b \in [-52, -47]$
