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

$$-\sqrt{\frac{63504}{196}}$$

A. Irrational

B. Not a Real number

C. Whole

D. Integer

E. Rational

---

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

$$11 - 4 \div 5 * 6 - (16 * 20)$$

A. $[327.87, 331.87]$

B. $[-312.13, -302.13]$

C. $[-196, -194]$

D. $[-317.8, -312.8]$

E. None of the above

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

$$-\sqrt{\frac{1547}{7}}$$

A. Irrational

B. Not a Real number

C. Integer

D. Whole

E. Rational

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

$$\frac{-18 + 11i}{4 + 5i}$$

A. $a \in [-17.5, -14.5]$ and $b \in [2.5, 4]$

B. $a \in [-1.5, 0]$ and $b \in [2.5, 4]$

C. $a \in [-1.5, 0]$ and $b \in [133.5, 134.5]$

D. $a \in [-5.5, -4]$ and $b \in [1.5, 3]$

E. $a \in [-3.5, -2.5]$ and $b \in [-2, -0.5]$

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

$$\frac{9 - 66i}{2 + 3i}$$

A. $a \in [-181, -179.5]$ and $b \in [-13, -12]$

B. $a \in [16, 17.5]$ and $b \in [-8.5, -7.5]$

C. $a \in [3.5, 5.5]$ and $b \in [-22.5, -21]$

D. $a \in [-15, -13.5]$ and $b \in [-13, -12]$

E. $a \in [-15, -13.5]$ and $b \in [-159.5, -158.5]$

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

$$4 - 20 \div 5 * 2 - (12 * 14)$$

A. $[-226.2, -222.1]$

B. $[-167, -165.4]$

C. $[-173.7, -171.1]$

D. $[169.6, 170.5]$

E. None of the above

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

$$\frac{18}{-14} + \sqrt{-64}i$$

A. Rational

B. Not a Complex Number

C. Irrational

D. Nonreal Complex

E. Pure Imaginary

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

$$(6 + 5i)(-7 + 4i)$$

A. $a \in [-25, -19]$ and $b \in [-66, -56]$

B. $a \in [-25, -19]$ and $b \in [58, 62]$

C. $a \in [-42, -41]$ and $b \in [16, 25]$

D. $a \in [-63, -56]$ and $b \in [10, 16]$

E. $a \in [-63, -56]$ and $b \in [-15, -7]$

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

$$\sqrt{\frac{-2145}{0}}i + \sqrt{182}i$$

A. Not a Complex Number

B. Nonreal Complex

C. Pure Imaginary

D. Rational

E. Irrational

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

$$(7 - 9i)(3 - 5i)$$

A. $a \in [-27, -17]$ and $b \in [-65, -61]$

B. $a \in [62, 67]$ and $b \in [8, 9]$

C. $a \in [62, 67]$ and $b \in [-13, -7]$

D. $a \in [21, 22]$ and $b \in [40, 52]$

E. $a \in [-27, -17]$ and $b \in [59, 64]$
