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

$$\sqrt{\frac{-1404}{0}} + \sqrt{126}$$

A. Rational

B. Irrational

C. Pure Imaginary

D. Nonreal Complex

E. Not a Complex Number

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

$$\frac{63 - 33i}{-5 - i}$$

A. $a \in [-13.45, -13.3]$ and $b \in [3.5, 5]$

B. $a \in [-13.15, -11.9]$ and $b \in [32.5, 33.5]$

C. $a \in [-11.45, -10.5]$ and $b \in [8.5, 10.5]$

D. $a \in [-11.45, -10.5]$ and $b \in [227.5, 229.5]$

E. $a \in [-282.1, -281.3]$ and $b \in [8.5, 10.5]$

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

$$(-5 - 2i)(-6 - 8i)$$

A. $a \in [44, 52]$ and $b \in [-32, -21]$

B. $a \in [44, 52]$ and $b \in [28, 30]$

C. $a \in [13, 20]$ and $b \in [48, 57]$

D. $a \in [13, 20]$ and $b \in [-52, -50]$

E. $a \in [27, 33]$ and $b \in [16, 18]$

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

$$\frac{9 + 55i}{6 + 2i}$$

A. $a \in [163.5, 164.5]$ and $b \in [6.5, 8]$

B. $a \in [3.5, 4.5]$ and $b \in [6.5, 8]$

C. $a \in [1, 2.5]$ and $b \in [26, 28.5]$

D. $a \in [-2.5, 0]$ and $b \in [8.5, 9]$

E. $a \in [3.5, 4.5]$ and $b \in [311.5, 312.5]$

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

$$18 - 20 \div 1 * 17 - (3 * 4)$$

A. $[26.82, 31.82]$

B. $[-339, -333]$

C. $[-1302, -1298]$

D. $[2.82, 5.82]$

E. None of the above

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

$$\sqrt{\frac{540}{12}}$$

A. Whole

B. Irrational

C. Not a Real number

D. Rational

E. Integer

---

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

$$\sqrt{\frac{-693}{7}} + \sqrt{0}i$$

A. Pure Imaginary

B. Irrational

C. Not a Complex Number

D. Rational

E. Nonreal Complex

---

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

$$(-7 - 3i)(4 - 2i)$$

A. $a \in [-32, -26]$ and $b \in [4, 8.1]$

B. $a \in [-36, -29]$ and $b \in [-3.7, -1.2]$

C. $a \in [-27, -20]$ and $b \in [-26.7, -24.5]$

D. $a \in [-36, -29]$ and $b \in [-1.3, 3.1]$

E. $a \in [-27, -20]$ and $b \in [23.8, 27]$

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

$$\sqrt{\frac{196}{169}}$$

A. Irrational

B. Integer

C. Whole

D. Rational

E. Not a Real number

---

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

$$1 - 17 \div 4 * 16 - (10 * 12)$$

A. $[-121.27, -118.27]$

B. $[114.73, 123.73]$

C. $[-926, -920]$

D. $[-188, -182]$

E. None of the above
