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

$$-\sqrt{\frac{6}{0}}$$

A. Irrational

B. Rational

C. Not a Real number

D. Integer

E. Whole

---

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

$$12 - 13^2 + 10 \div 3 * 11 \div 2$$

A. $[198.33, 200.33]$

B. $[-158.85, -154.85]$

C. $[181.15, 188.15]$

D. $[-143.67, -135.67]$

E. None of the above

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

$$\sqrt{\frac{1190}{14}}$$

A. Irrational

B. Integer

C. Whole

D. Not a Real number

E. Rational

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

$$\frac{63 - 55i}{3 - 4i}$$

A. $a \in [15.5, 18.5]$ and $b \in [86.5, 88.5]$

B. $a \in [20, 22.5]$ and $b \in [13, 14.5]$

C. $a \in [-2, -1]$ and $b \in [-17.5, -16]$

D. $a \in [15.5, 18.5]$ and $b \in [2.5, 5]$

E. $a \in [408.5, 409.5]$ and $b \in [2.5, 5]$

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

$$\frac{54 + 77i}{4 - 3i}$$

A. $a \in [17, 19.5]$ and $b \in [5, 6.5]$

B. $a \in [-1.5, 0.5]$ and $b \in [469.5, 471.5]$

C. $a \in [-16, -14.5]$ and $b \in [18, 20]$

D. $a \in [-1.5, 0.5]$ and $b \in [18, 20]$

E. $a \in [13, 16]$ and $b \in [-26.5, -25.5]$

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

$$1 - 2 \div 4 * 9 - (16 * 5)$$

A. $[-86.5, -81.5]$

B. $[-97.5, -93.5]$

C. $[-81.06, -78.06]$

D. $[76.94, 86.94]$

E. None of the above

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

$$\sqrt{\frac{169}{441}} + \sqrt{165}i$$

A. Pure Imaginary

B. Not a Complex Number

C. Irrational

D. Nonreal Complex

E. Rational

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

$$(-6 - 5i)(4 - 2i)$$

A. $a \in [-18, -11]$ and $b \in [30.5, 33.9]$

B. $a \in [-29, -18]$ and $b \in [9.4, 10.2]$

C. $a \in [-39, -31]$ and $b \in [-11.4, -6.3]$

D. $a \in [-39, -31]$ and $b \in [7.6, 8.1]$

E. $a \in [-18, -11]$ and $b \in [-32.4, -31.5]$

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

$$-\sqrt{\frac{256}{529}} + 49i^2$$

A. Irrational

B. Pure Imaginary

C. Not a Complex Number

D. Rational

E. Nonreal Complex

---

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

$$(10 + 4i)(-7 + 6i)$$

A. $a \in [-74, -69]$ and $b \in [22, 29]$

B. $a \in [-54, -43]$ and $b \in [-90, -81]$

C. $a \in [-97, -92]$ and $b \in [29, 34]$

D. $a \in [-54, -43]$ and $b \in [85, 90]$

E. $a \in [-97, -92]$ and $b \in [-37, -30]$
