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

$$-\sqrt{\frac{82944}{144}}$$

A. Irrational

B. Integer

C. Whole

D. Not a Real number

E. Rational

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

$$-\sqrt{\frac{15}{0}}$$

A. Integer

B. Not a Real number

C. Whole

D. Irrational

E. Rational

---

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

$$6 - 9^2 + 18 \div 15 * 3 \div 13$$

A. $[-74.84, -74.52]$

B. $[-75.27, -74.92]$

C. $[86.83, 87.11]$

D. $[87.21, 87.35]$

E. None of the above

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

$$\sqrt{\frac{441}{7}} + \sqrt{132}i$$

A. Not a Complex Number

B. Pure Imaginary

C. Nonreal Complex

D. Rational

E. Irrational

---

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

$$\frac{72 - 77i}{6 + 5i}$$

A. $a \in [13.15, 13.5]$ and $b \in [-2, -1.5]$

B. $a \in [46.45, 47.25]$ and $b \in [-14.5, -12.5]$

C. $a \in [0.55, 1.05]$ and $b \in [-822.5, -821]$

D. $a \in [0.55, 1.05]$ and $b \in [-14.5, -12.5]$

E. $a \in [11.4, 12.45]$ and $b \in [-17, -14.5]$

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

$$(7 + 10i)(-4 - 2i)$$

A. $a \in [-12, -3]$ and $b \in [49, 59]$

B. $a \in [-12, -3]$ and $b \in [-60, -51]$

C. $a \in [-48, -43]$ and $b \in [26, 27]$

D. $a \in [-32, -25]$ and $b \in [-20, -19]$

E. $a \in [-48, -43]$ and $b \in [-31, -23]$

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

$$\frac{72 - 11i}{-4 + 5i}$$

A. $a \in [-343.5, -341.5]$ and $b \in [-8, -7.5]$

B. $a \in [-18.5, -16.5]$ and $b \in [-2.5, -2]$

C. $a \in [-7, -5]$ and $b \in [8.5, 11]$

D. $a \in [-9, -7]$ and $b \in [-316.5, -315.5]$

E. $a \in [-9, -7]$ and $b \in [-8, -7.5]$

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

$$7 - 18 \div 4 * 11 - (12 * 15)$$

A. $[-177.41, -171.41]$

B. $[184.59, 193.59]$

C. $[-821.5, -808.5]$

D. $[-223.5, -221.5]$

E. None of the above

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

$$\frac{0}{9\pi} + \sqrt{10}i$$

A. Not a Complex Number

B. Irrational

C. Nonreal Complex

D. Rational

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.

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

A. $a \in [4, 8]$ and $b \in [80, 85]$

B. $a \in [25, 37]$ and $b \in [25, 31]$

C. $a \in [4, 8]$ and $b \in [-88, -81]$

D. $a \in [56, 63]$ and $b \in [56, 67]$

E. $a \in [56, 63]$ and $b \in [-64, -53]$
