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

$$\frac{0}{10\pi} + \sqrt{2}i$$

A. Irrational

B. Not a Complex Number

C. Pure Imaginary

D. Nonreal Complex

E. Rational

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

$$\frac{9 - 44i}{-3 - 5i}$$

A. $a \in [-4, -2.5]$ and $b \in [7.5, 9.5]$

B. $a \in [192.5, 194]$ and $b \in [4.5, 6.5]$

C. $a \in [4.5, 6]$ and $b \in [4.5, 6.5]$

D. $a \in [4.5, 6]$ and $b \in [176, 178]$

E. $a \in [-8, -7]$ and $b \in [1.5, 3.5]$

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

$$(4 - 9i)(-7 - 3i)$$

A. $a \in [-4, 5]$ and $b \in [73, 81]$

B. $a \in [-57, -47]$ and $b \in [45, 52]$

C. $a \in [-4, 5]$ and $b \in [-80, -67]$

D. $a \in [-57, -47]$ and $b \in [-53, -50]$

E. $a \in [-35, -26]$ and $b \in [27, 31]$

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

$$\frac{72 + 33i}{-5 - 6i}$$

A. $a \in [-559, -557.5]$ and $b \in [3.5, 5]$

B. $a \in [-16, -13.5]$ and $b \in [-6.5, -5]$

C. $a \in [-10.5, -8.5]$ and $b \in [3.5, 5]$

D. $a \in [-10.5, -8.5]$ and $b \in [265.5, 268]$

E. $a \in [-3.5, -1]$ and $b \in [-10, -9.5]$

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

$$-\sqrt{\frac{36864}{64}}$$

A. Not a Real number

B. Integer

C. Rational

D. Irrational

E. Whole

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

$$\sqrt{\frac{20736}{81}}$$

A. Irrational

B. Whole

C. Rational

D. Not a Real number

E. Integer

---

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

$$20 - 3^2 + 2 \div 4 * 15 \div 13$$

A. $[10, 11.08]$

B. $[29.28, 30.69]$

C. $[11.34, 11.71]$

D. $[28.52, 29.53]$

E. None of the above

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

$$\frac{\sqrt{210}}{7} + 9i^2$$

A. Pure Imaginary

B. Rational

C. Not a Complex Number

D. Nonreal Complex

E. Irrational

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

$$(4 + 2i)(3 + 6i)$$

A. $a \in [22, 25]$ and $b \in [18, 20]$

B. $a \in [-4, 2]$ and $b \in [-32, -29]$

C. $a \in [10, 14]$ and $b \in [10, 14]$

D. $a \in [22, 25]$ and $b \in [-18, -17]$

E. $a \in [-4, 2]$ and $b \in [26, 39]$

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

$$3 - 12^2 + 5 \div 19 * 18 \div 15$$

A. $[-141.4, -140.76]$

B. $[146.4, 147.28]$

C. $[-140.88, -140.28]$

D. $[147.01, 147.75]$

E. None of the above
