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

$$16 - 9^2 + 4 \div 17 * 14 \div 3$$

A. $[-65.1, -64.36]$

B. $[97.97, 98.99]$

C. $[-64.37, -63.54]$

D. $[96, 97.36]$

E. None of the above

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

$$\sqrt{\frac{3600}{100}}$$

A. Irrational

B. Whole

C. Not a Real number

D. Integer

E. Rational

---

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

$$\sqrt{\frac{64}{225}} + \sqrt{63}i$$

A. Rational

B. Nonreal Complex

C. Not a Complex Number

D. Irrational

E. Pure Imaginary

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

$$2 - 10 \div 18 * 14 - (1 * 15)$$

A. $[-105.67, -98.67]$

B. $[-13.04, -8.04]$

C. $[9.96, 23.96]$

D. $[-21.78, -15.78]$

E. None of the above

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

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

A. $a \in [-61, -51]$ and $b \in [-14, -4]$

B. $a \in [-3, -1]$ and $b \in [49, 62]$

C. $a \in [-61, -51]$ and $b \in [10, 14]$

D. $a \in [-3, -1]$ and $b \in [-61, -58]$

E. $a \in [-32, -25]$ and $b \in [27, 34]$

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

$$\sqrt{\frac{20736}{144}}$$

A. Irrational

B. Rational

C. Whole

D. Not a Real number

E. Integer

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

$$\frac{45 + 88i}{-1 + 4i}$$

A. $a \in [17, 18.5]$ and $b \in [-16.5, -14.5]$

B. $a \in [-24.5, -23]$ and $b \in [4.5, 6]$

C. $a \in [306, 308]$ and $b \in [-16.5, -14.5]$

D. $a \in [-45.5, -44]$ and $b \in [21.5, 22.5]$

E. $a \in [17, 18.5]$ and $b \in [-269, -267.5]$

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

$$\frac{-9}{17} + \sqrt{198}i$$

A. Irrational

B. Nonreal Complex

C. Rational

D. Pure Imaginary

E. Not a Complex Number

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

$$(-2 - 7i)(4 - 8i)$$

A. $a \in [-72, -63]$ and $b \in [-14, -11]$

B. $a \in [-12, -1]$ and $b \in [47, 57]$

C. $a \in [45, 52]$ and $b \in [-45, -43]$

D. $a \in [45, 52]$ and $b \in [39, 47]$

E. $a \in [-72, -63]$ and $b \in [10, 14]$

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

$$\frac{-36 - 55i}{-3 + 6i}$$

A. $a \in [-5.5, -4.5]$ and $b \in [380.5, 382]$

B. $a \in [9, 10.5]$ and $b \in [-1.5, 0]$

C. $a \in [-5.5, -4.5]$ and $b \in [8, 10]$

D. $a \in [11.5, 14]$ and $b \in [-9.5, -8]$

E. $a \in [-222.5, -221]$ and $b \in [8, 10]$
