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

$$17 - 8^2 + 3 \div 5 * 12 \div 15$$

   A. $[-46.69, -46.05]$

   B. $[80.42, 81.06]$

   C. $[-47.26, -46.63]$

   D. $[81.42, 82.48]$

   E. None of the above

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

$$\frac{45 + 33i}{-1 - 4i}$$

   A. $a \in [-46.5, -44.5]$ and $b \in [-9.5, -7.5]$

   B. $a \in [-11, -10]$ and $b \in [8, 9.5]$

   C. $a \in [4, 5.5]$ and $b \in [-13, -11]$

   D. $a \in [-178.5, -176.5]$ and $b \in [8, 9.5]$

   E. $a \in [-11, -10]$ and $b \in [146, 147.5]$

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

$$(-9 + 6i)(5 - 7i)$$

   A. $a \in [-5, 4]$ and $b \in [-96, -87]$

   B. $a \in [-45, -39]$ and $b \in [-42, -39]$

   C. $a \in [-87, -82]$ and $b \in [30, 36]$

   D. $a \in [-5, 4]$ and $b \in [92, 97]$

E. $a \in [-87, -82]$ and $b \in [-35, -24]$

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

$$\frac{-9 - 88i}{4 + 2i}$$

A. $a \in [-11, -9.5]$ and $b \in [-335.5, -332.5]$

B. $a \in [-11, -9.5]$ and $b \in [-17, -15]$

C. $a \in [-212.5, -211.5]$ and $b \in [-17, -15]$

D. $a \in [6, 9]$ and $b \in [-19, -18]$

E. $a \in [-4, -2]$ and $b \in [-44.5, -43]$

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

$$\sqrt{\frac{0}{5}} + \sqrt{8}i$$

A. Pure Imaginary

B. Not a Complex Number

C. Rational

D. Nonreal Complex

E. Irrational

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

$$-\sqrt{\frac{2340}{12}} + 3i^2$$

A. Not a Complex Number

B. Nonreal Complex

C. Pure Imaginary

D. Irrational

E. Rational

---

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

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

A. $a \in [-62, -56]$ and $b \in [-2.1, -0.2]$

B. $a \in [-62, -56]$ and $b \in [1.2, 4.7]$

C. $a \in [18, 23]$ and $b \in [55.5, 58.3]$

D. $a \in [-24, -15]$ and $b \in [40.1, 42.2]$

E. $a \in [18, 23]$ and $b \in [-59.6, -55.1]$

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

$$\sqrt{\frac{-693}{7}}$$

A. Not a Real number

B. Integer

C. Whole

D. Irrational

E. Rational

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

$$-\sqrt{\frac{144}{169}}$$

A. Not a Real number

B. Whole

C. Irrational

D. Rational

E. Integer

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

$$3 - 6^2 + 12 \div 4 * 10 \div 11$$

A. $[40.6, 42.5]$

B. $[-32.9, -27.4]$

C. $[-33.5, -31.3]$

D. $[38.3, 39.1]$

E. None of the above