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

$$\frac{-54 - 11i}{5 + 3i}$$

   A. $a \in [-12, -10.5]$ and $b \in [-4, -2]$

   B. $a \in [-303.5, -302.5]$ and $b \in [2, 4]$

   C. $a \in [-7.5, -6.5]$ and $b \in [-7, -6]$

   D. $a \in [-10, -8.5]$ and $b \in [2, 4]$

   E. $a \in [-10, -8.5]$ and $b \in [105.5, 108.5]$

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

$$(10 - 9i)(8 + 6i)$$

   A. $a \in [75, 81]$ and $b \in [-59, -49]$

   B. $a \in [131, 140]$ and $b \in [-18, -2]$

   C. $a \in [20, 28]$ and $b \in [-134, -130]$

   D. $a \in [20, 28]$ and $b \in [131, 135]$

   E. $a \in [131, 140]$ and $b \in [7, 21]$

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

$$1 - 8 \div 19 * 5 - (10 * 3)$$

   A. $[-30, -27.4]$

   B. $[29, 33]$

   C. $[-32.3, -30.3]$

   D. $[-34.5, -32.9]$

    E. None of the above

---

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

$$\sqrt{\frac{-560}{5}} + \sqrt{0}i$$

    A. Not a Complex Number

    B. Irrational

    C. Pure Imaginary

    D. Nonreal Complex

    E. Rational

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

$$\sqrt{\frac{1170}{10}}$$

    A. Integer

    B. Not a Real number

    C. Rational

    D. Whole

    E. Irrational

---

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

$$\frac{72 - 77i}{3 - 4i}$$

    A. $a \in [-4.5, -2.5]$ and $b \in [-22, -19.5]$

    B. $a \in [23.5, 24.5]$ and $b \in [18.5, 21]$

C. $a \in [523, 526.5]$ and $b \in [1.5, 3.5]$

D. $a \in [19.5, 21.5]$ and $b \in [1.5, 3.5]$

E. $a \in [19.5, 21.5]$ and $b \in [56, 57.5]$

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

$$(-3 - 7i)(10 + 2i)$$

A. $a \in [-44, -38]$ and $b \in [-66, -61]$

B. $a \in [-20, -9]$ and $b \in [-82, -75]$

C. $a \in [-35, -26]$ and $b \in [-17, -11]$

D. $a \in [-44, -38]$ and $b \in [64, 68]$

E. $a \in [-20, -9]$ and $b \in [70, 77]$

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

$$17 - 4^2 + 8 \div 7 * 20 \div 9$$

A. $[30.6, 33.4]$

B. $[2.1, 6.2]$

C. $[35.2, 39.4]$

D. $[-1.4, 3]$

E. None of the above

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

$$-\sqrt{\frac{36}{49}} + 100i^2$$

A. Rational

B. Irrational

C. Pure Imaginary

D. Not a Complex Number

E. Nonreal Complex

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

$$\sqrt{\frac{400}{5}}$$

A. Rational

B. Not a Real number

C. Irrational

D. Integer

E. Whole