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

$$\frac{-54 + 77i}{5 - i}$$

   A. $a \in [-14, -12.5]$ and $b \in [11.5, 13]$

   B. $a \in [-12, -10.5]$ and $b \in [-77.5, -76.5]$

   C. $a \in [-14, -12.5]$ and $b \in [330.5, 331.5]$

   D. $a \in [-8, -6.5]$ and $b \in [15.5, 18.5]$

   E. $a \in [-348, -346.5]$ and $b \in [11.5, 13]$

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

$$\frac{63 - 55i}{-8 + i}$$

   A. $a \in [-9.2, -8.2]$ and $b \in [376, 377.5]$

   B. $a \in [-9.2, -8.2]$ and $b \in [5, 6]$

   C. $a \in [-8.2, -7.35]$ and $b \in [-56, -54.5]$

   D. $a \in [-7.5, -6.55]$ and $b \in [7.5, 8]$

   E. $a \in [-559.1, -558.35]$ and $b \in [5, 6]$

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

$$(-7 + 8i)(3 + 10i)$$

   A. $a \in [59, 63]$ and $b \in [-96, -90]$

   B. $a \in [-109, -100]$ and $b \in [-49, -44]$

   C. $a \in [-109, -100]$ and $b \in [46, 48]$

   D. $a \in [-31, -19]$ and $b \in [76, 86]$

E. $a \in [59, 63]$ and $b \in [94, 98]$

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

$$\sqrt{\frac{1716}{11}}$$

  A. Whole

  B. Irrational

  C. Rational

  D. Not a Real number

  E. Integer

---

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

$$17 - 20^2 + 16 \div 12 * 5 \div 13$$

  A. $[-382.5, -382.32]$

  B. $[-383.45, -382.66]$

  C. $[416.92, 417.21]$

  D. $[417.51, 417.62]$

  E. None of the above

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

$$15 - 9^2 + 20 \div 6 * 10 \div 4$$

  A. $[95.08, 101.08]$

  B. $[-65.92, -64.92]$

  C. $[-58.67, -55.67]$

   D. $[97.33, 111.33]$

   E. None of the above

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

$$\sqrt{\frac{-1980}{12}} + \sqrt{0}i$$

   A. Rational

   B. Nonreal Complex

   C. Irrational

   D. Not a Complex Number

   E. Pure Imaginary

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

$$\frac{\sqrt{154}}{13} + \sqrt{-7}i$$

   A. Irrational

   B. Rational

   C. Nonreal Complex

   D. Pure Imaginary

   E. Not a Complex Number

---

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

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

   A. $a \in [-25, -18]$ and $b \in [90.8, 93.8]$

   B. $a \in [-89, -84]$ and $b \in [31, 36.1]$

C. $a \in [-89, -84]$ and $b \in [-34.1, -31.3]$

D. $a \in [-25, -18]$ and $b \in [-95.7, -90.9]$

E. $a \in [-60, -49]$ and $b \in [-38.1, -34]$

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10. Choose the **smallest** set of Real numbers that the number below belongs to.
$$-\sqrt{\frac{256}{289}}$$

A. Rational

B. Integer

C. Irrational

D. Not a Real number

E. Whole