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

$$\frac{72 + 44i}{-6 - 7i}$$

A. $a \in [-740.5, -739.5]$ and $b \in [2.5, 4.5]$

B. $a \in [-3, -1]$ and $b \in [-11.5, -8.5]$

C. $a \in [-10, -8]$ and $b \in [239.5, 241]$

D. $a \in [-13, -10.5]$ and $b \in [-6.5, -5]$

E. $a \in [-10, -8]$ and $b \in [2.5, 4.5]$

---

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

$$-\sqrt{\frac{10000}{25}}$$

A. Not a Real number

B. Whole

C. Irrational

D. Integer

E. Rational

---

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

$$(5 + 6i)(-4 + 9i)$$

A. $a \in [34, 40]$ and $b \in [-75, -67]$

B. $a \in [-76, -72]$ and $b \in [18, 23]$

C. $a \in [-76, -72]$ and $b \in [-29, -20]$

D. $a \in [-23, -14]$ and $b \in [50, 59]$

E. $a \in [34, 40]$ and $b \in [65, 71]$

---

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

$$\frac{-9}{10} + \sqrt{-9}i$$

A. Nonreal Complex

B. Irrational

C. Rational

D. Not a Complex Number

E. Pure Imaginary

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

$$\frac{-63 - 55i}{2 + 4i}$$

A. $a \in [-32, -30.5]$ and $b \in [-14.5, -12.5]$

B. $a \in [-347, -344.5]$ and $b \in [6.5, 8.5]$

C. $a \in [2.5, 5.5]$ and $b \in [-19, -17.5]$

D. $a \in [-18, -17]$ and $b \in [141, 142.5]$

E. $a \in [-18, -17]$ and $b \in [6.5, 8.5]$

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

$$6 - 14 \div 19 * 18 - (5 * 2)$$

A. $[-27.53, -20.53]$

B. $[-18.26, -15.26]$

C. $[10.96, 16.96]$

D. $[-10.04, -0.04]$

E. None of the above

---

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

$$(7 + 3i)(-4 - 8i)$$

A. $a \in [-7, -3]$ and $b \in [-68, -67]$

B. $a \in [-7, -3]$ and $b \in [68, 72]$

C. $a \in [-31, -26]$ and $b \in [-24, -21]$

D. $a \in [-55, -51]$ and $b \in [43, 49]$

E. $a \in [-55, -51]$ and $b \in [-45, -37]$

---

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

$$\sqrt{\frac{990}{9}}$$

A. Integer

B. Irrational

C. Not a Real number

D. Whole

E. Rational

---

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

$$\frac{6}{-19} + 36i^2$$

A. Irrational

B. Nonreal Complex

C. Pure Imaginary

D. Rational

E. Not a Complex Number

---

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

$$19 - 20^2 + 12 \div 17 * 3 \div 16$$

A. $[-380.98, -380.74]$

B. $[-381.23, -380.87]$

C. $[418.93, 419.11]$

D. $[419.09, 419.4]$

E. None of the above
