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

$$\frac{-18 - 77i}{-5 + i}$$

A. $a \in [0, 1.5]$ and $b \in [14.9, 15.7]$

B. $a \in [2.5, 4.5]$ and $b \in [-77.55, -76.8]$

C. $a \in [0, 1.5]$ and $b \in [402.9, 403.2]$

D. $a \in [11.5, 13.5]$ and $b \in [14.9, 15.7]$

E. $a \in [5, 7]$ and $b \in [14, 14.55]$

---

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

$$\frac{45 - 88i}{-4 + 7i}$$

A. $a \in [-11.5, -10]$ and $b \in [-13.5, -11.5]$

B. $a \in [-13.5, -12]$ and $b \in [-0.5, 2]$

C. $a \in [-797, -795]$ and $b \in [-0.5, 2]$

D. $a \in [5.5, 8]$ and $b \in [9, 11]$

E. $a \in [-13.5, -12]$ and $b \in [36.5, 38.5]$

---

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

$$(4 - 6i)(3 + 7i)$$

A. $a \in [-31, -28]$ and $b \in [-54, -44]$

B. $a \in [6, 15]$ and $b \in [-44, -41]$

C. $a \in [-31, -28]$ and $b \in [42, 48]$

D. $a \in [48, 57]$ and $b \in [4, 13]$

E. $a \in [48, 57]$ and $b \in [-10, -9]$

---

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

$$-\sqrt{\frac{-525}{5}}$$

A. Whole

B. Integer

C. Not a Real number

D. Rational

E. Irrational

---

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

$$15 - 14^2 + 5 \div 17 * 18 \div 8$$

A. $[211.12, 211.99]$

B. $[-180.44, -180.08]$

C. $[-181.33, -180.83]$

D. $[210.75, 211.12]$

E. None of the above

---

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

$$14 - 7 \div 20 * 6 - (10 * 12)$$

A. $[20.1, 24.9]$

B. $[133, 136.2]$

C. $[-109.2, -108]$

D. $[-107.1, -103.2]$

E. None of the above

---

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

$$\sqrt{\frac{-2496}{0}} + \sqrt{60}$$

A. Irrational

B. Pure Imaginary

C. Not a Complex Number

D. Rational

E. Nonreal Complex

---

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

$$\frac{18}{-18} + 4i^2$$

A. Rational

B. Nonreal Complex

C. Not a Complex Number

D. Pure Imaginary

E. Irrational

---

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

$$(3 - 9i)(-10 + 5i)$$

A. $a \in [-75, -73]$ and $b \in [-82, -74]$

B. $a \in [14, 17]$ and $b \in [-109, -98]$

C. $a \in [-75, -73]$ and $b \in [73, 76]$

D. $a \in [14, 17]$ and $b \in [104, 107]$

E. $a \in [-34, -27]$ and $b \in [-47, -43]$

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

$$-\sqrt{\frac{1134}{9}}$$

A. Not a Real number

B. Irrational

C. Rational

D. Whole

E. Integer
