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

$$\frac{-18 - 44i}{-3 + 8i}$$

A. $a \in [5.9, 6.8]$ and $b \in [-6, -4]$

B. $a \in [-4.2, -4]$ and $b \in [2.5, 4.5]$

C. $a \in [-4.2, -4]$ and $b \in [275.5, 277]$

D. $a \in [-298.35, -297.9]$ and $b \in [2.5, 4.5]$

E. $a \in [5, 5.7]$ and $b \in [-1, 0.5]$

---

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

$$\frac{18 + 11i}{7 - 8i}$$

A. $a \in [1.45, 2.15]$ and $b \in [-0.65, -0.2]$

B. $a \in [0.2, 0.45]$ and $b \in [1.9, 2.15]$

C. $a \in [0.2, 0.45]$ and $b \in [220.8, 221.2]$

D. $a \in [2.4, 3.1]$ and $b \in [-1.55, -0.95]$

E. $a \in [37.35, 38.35]$ and $b \in [1.9, 2.15]$

---

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

$$(7 - 4i)(-5 - 10i)$$

A. $a \in [0, 13]$ and $b \in [85, 94]$

B. $a \in [-83, -74]$ and $b \in [-55, -49]$

C. $a \in [-40, -29]$ and $b \in [38, 43]$

D. $a \in [-83, -74]$ and $b \in [50, 57]$

E. $a \in [0, 13]$ and $b \in [-93, -88]$

---

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

$$\sqrt{\frac{39204}{324}}$$

A. Integer

B. Rational

C. Not a Real number

D. Whole

E. Irrational

---

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

$$9 - 7^2 + 12 \div 17 * 8 \div 13$$

A. $[58.41, 58.54]$

B. $[-40.59, -39.77]$

C. $[57.88, 58.26]$

D. $[-39.73, -39.06]$

E. None of the above

---

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

$$12 - 1^2 + 18 \div 3 * 5 \div 14$$

A. $[15.06, 15.19]$

B. $[13.11, 13.2]$

C. $[13, 13.14]$

D. $[11.03, 11.11]$

E. None of the above

---

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

$$\sqrt{\frac{36}{0}} + \sqrt{182}i$$

A. Not a Complex Number

B. Rational

C. Nonreal Complex

D. Irrational

E. Pure Imaginary

---

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

$$\frac{-18}{10} + 36i^2$$

A. Irrational

B. Rational

C. Pure Imaginary

D. Nonreal Complex

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.

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

A. $a \in [26, 31]$ and $b \in [44.7, 45.2]$

B. $a \in [-60, -47]$ and $b \in [0.2, 3.5]$

C. $a \in [-16, -3]$ and $b \in [-42.6, -39.8]$

D. $a \in [-60, -47]$ and $b \in [-4, -1.7]$

E. $a \in [26, 31]$ and $b \in [-47.3, -44.9]$

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

$$-\sqrt{\frac{-605}{11}}$$

A. Integer

B. Rational

C. Whole

D. Irrational

E. Not a Real number
