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

$$\frac{2}{-4} + \sqrt{-25}i$$

A. Not a Complex Number

B. Irrational

C. Pure Imaginary

D. Nonreal Complex

E. Rational

---

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

$$(-8 + 9i)(4 - 5i)$$

A. $a \in [13, 17]$ and $b \in [73, 78]$

B. $a \in [13, 17]$ and $b \in [-79, -74]$

C. $a \in [-39, -30]$ and $b \in [-47, -40]$

D. $a \in [-83, -73]$ and $b \in [0, 6]$

E. $a \in [-83, -73]$ and $b \in [-6, 2]$

---

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

$$\frac{54 + 33i}{-4 - 5i}$$

A. $a \in [-1.5, 0]$ and $b \in [-11, -8]$

B. $a \in [-10, -9]$ and $b \in [3, 3.5]$

C. $a \in [-10, -9]$ and $b \in [137.5, 139]$

D. $a \in [-381.5, -379.5]$ and $b \in [3, 3.5]$

E. $a \in [-14.5, -13]$ and $b \in [-8, -6]$

---

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

$$\frac{-9 + 44i}{2 - 5i}$$

A. $a \in [-239, -237]$ and $b \in [1, 2]$

B. $a \in [-5.5, -3.5]$ and $b \in [-9.5, -8]$

C. $a \in [6, 8]$ and $b \in [3.5, 5.5]$

D. $a \in [-9.5, -7.5]$ and $b \in [1, 2]$

E. $a \in [-9.5, -7.5]$ and $b \in [42, 43.5]$

---

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

$$4 - 2^2 + 5 \div 17 * 15 \div 6$$

A. $[-0.33, 0.08]$

B. $[0.55, 1.32]$

C. $[7.98, 8.4]$

D. $[8.09, 9.27]$

E. None of the above

---

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

$$-\sqrt{\frac{73984}{256}}$$

A. Integer

B. Irrational

C. Whole

D. Rational

E. Not a Real number

---

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

$$\sqrt{\frac{2916}{36}}$$

A. Irrational

B. Not a Real number

C. Rational

D. Integer

E. Whole

---

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

$$\sqrt{\frac{144}{121}} + 64i^2$$

A. Irrational

B. Pure Imaginary

C. Nonreal Complex

D. Not a Complex Number

E. Rational

---

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

$$(-4 + 8i)(-9 + 5i)$$

A. $a \in [-5, 1]$ and $b \in [-92, -91]$

B. $a \in [-5, 1]$ and $b \in [92, 94]$

C. $a \in [29, 42]$ and $b \in [34, 42]$

D. $a \in [75, 77]$ and $b \in [51, 57]$

E. $a \in [75, 77]$ and $b \in [-56, -47]$

---

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

$$2 - 16^2 + 3 \div 5 * 9 \div 14$$

A. $[-253.67, -253.48]$

B. $[257.67, 258.35]$

C. $[258.24, 258.57]$

D. $[-254.36, -253.95]$

E. None of the above
