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

$$-\sqrt{\frac{529}{81}} + 9i^2$$

A. Nonreal Complex

B. Irrational

C. Rational

D. Pure Imaginary

E. Not a Complex Number

---

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

$$(4 - 7i)(-2 - 10i)$$

A. $a \in [62, 65]$ and $b \in [-54, -50]$

B. $a \in [-11, -3]$ and $b \in [66, 74]$

C. $a \in [-78, -76]$ and $b \in [-29, -24]$

D. $a \in [-78, -76]$ and $b \in [25, 31]$

E. $a \in [62, 65]$ and $b \in [51, 61]$

---

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

$$\frac{36 + 77i}{-6 - 8i}$$

A. $a \in [3, 6]$ and $b \in [-8, -7]$

B. $a \in [-833.5, -831]$ and $b \in [-2.5, -1]$

C. $a \in [-7, -5.5]$ and $b \in [-11, -9]$

D. $a \in [-10, -7.5]$ and $b \in [-2.5, -1]$

E. $a \in [-10, -7.5]$ and $b \in [-175.5, -173]$

---

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

$$\frac{-27 + 44i}{2 - 8i}$$

A. $a \in [-6.5, -4]$ and $b \in [-128.5, -127.5]$

B. $a \in [-6.5, -4]$ and $b \in [-2.5, -1.5]$

C. $a \in [-15, -12.5]$ and $b \in [-6, -5]$

D. $a \in [-408, -405.5]$ and $b \in [-2.5, -1.5]$

E. $a \in [4, 4.5]$ and $b \in [4, 5.5]$

---

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

$$15 - 10 \div 17 * 5 - (9 * 11)$$

A. $[111.3, 115.6]$

B. $[-87.9, -84.7]$

C. $[-84.7, -82.5]$

D. $[31.8, 35.2]$

E. None of the above

---

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

$$-\sqrt{\frac{-2652}{12}}$$

A. Whole

B. Irrational

C. Not a Real number

D. Integer

E. Rational

---

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

$$-\sqrt{\frac{81}{169}}$$

A. Integer

B. Not a Real number

C. Irrational

D. Whole

E. Rational

---

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

$$-\sqrt{\frac{1690}{13}} + 4i^2$$

A. Irrational

B. Not a Complex Number

C. Rational

D. Pure Imaginary

E. Nonreal Complex

---

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

$$(10 + 3i)(-4 + 8i)$$

A. $a \in [-67, -63]$ and $b \in [-69, -65]$

B. $a \in [-18, -15]$ and $b \in [90, 98]$

C. $a \in [-67, -63]$ and $b \in [67, 75]$

D. $a \in [-18, -15]$ and $b \in [-97, -91]$

E. $a \in [-45, -34]$ and $b \in [19, 27]$

---

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

$$14 - 1 \div 3 * 16 - (2 * 15)$$

A. $[-18.7, -12.3]$

B. $[-22.9, -17.7]$

C. $[43.8, 44.5]$

D. $[98.9, 101.4]$

E. None of the above
