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

$$\sqrt{\frac{3600}{100}}$$

   A. Rational

   B. Not a Real number

   C. Irrational

   D. Integer

   E. Whole

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

$$(-6 - 8i)(-4 + 7i)$$

   A. $a \in [-33, -24]$ and $b \in [74, 75]$

   B. $a \in [18, 26]$ and $b \in [-57, -55]$

   C. $a \in [80, 82]$ and $b \in [-10, -7]$

   D. $a \in [-33, -24]$ and $b \in [-79, -73]$

   E. $a \in [80, 82]$ and $b \in [8, 11]$

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

$$\frac{63 - 66i}{-5 - 3i}$$

   A. $a \in [-14, -12]$ and $b \in [21, 22.5]$

   B. $a \in [-5.5, -2.5]$ and $b \in [517.5, 520]$

   C. $a \in [-16.5, -14]$ and $b \in [3, 5]$

   D. $a \in [-5.5, -2.5]$ and $b \in [14, 16.5]$

    E. $a \in [-117.5, -116]$ and $b \in [14, 16.5]$

---

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

$$\sqrt{\frac{3120}{15}} + \sqrt{154}i$$

    A. Not a Complex Number

    B. Irrational

    C. Rational

    D. Pure Imaginary

    E. Nonreal Complex

---

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

$$\frac{45 + 22i}{-1 + 3i}$$

    A. $a \in [1.5, 3.5]$ and $b \in [-16, -14.5]$

    B. $a \in [-12, -10]$ and $b \in [10.5, 12]$

    C. $a \in [-45.5, -44]$ and $b \in [6.5, 8]$

    D. $a \in [1.5, 3.5]$ and $b \in [-157.5, -156.5]$

    E. $a \in [20, 21.5]$ and $b \in [-16, -14.5]$

---

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

$$6 - 7 \div 5 * 14 - (1 * 19)$$

    A. $[-13.1, -9.1]$

    B. $[24.9, 25.9]$

C. $[-277.4, -274.4]$

D. $[-33.6, -27.6]$

E. None of the above

---

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

$$-\sqrt{\frac{41616}{289}}$$

A. Whole

B. Irrational

C. Not a Real number

D. Rational

E. Integer

---

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

$$\frac{\sqrt{182}}{19} + \sqrt{-4}i$$

A. Not a Complex Number

B. Rational

C. Nonreal Complex

D. Pure Imaginary

E. Irrational

---

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

$$9 - 10^2 + 6 \div 5 * 7 \div 2$$

A. $[-87.8, -84.8]$

B. $[-93.91, -88.91]$

C. $[108.09, 112.09]$

D. $[113.2, 122.2]$

E. None of the above

---

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

$$(-4 + 3i)(-5 - 9i)$$

A. $a \in [47, 48]$ and $b \in [18, 28]$

B. $a \in [-17, -3]$ and $b \in [-58, -49]$

C. $a \in [47, 48]$ and $b \in [-23, -15]$

D. $a \in [17, 27]$ and $b \in [-28, -26]$

E. $a \in [-17, -3]$ and $b \in [47, 54]$