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

$$\sqrt{\frac{-1683}{9}}i + \sqrt{156}i$$

A. Not a Complex Number

B. Pure Imaginary

C. Nonreal Complex

D. Rational

E. Irrational

---

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

$$(8 - 2i)(3 - 6i)$$

A. $a \in [11, 14]$ and $b \in [52, 55]$

B. $a \in [11, 14]$ and $b \in [-58, -52]$

C. $a \in [32, 37]$ and $b \in [-48, -39]$

D. $a \in [24, 29]$ and $b \in [10, 14]$

E. $a \in [32, 37]$ and $b \in [40, 43]$

---

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

$$3 - 19^2 + 5 \div 8 * 7 \div 15$$

A. $[363.88, 364.06]$

B. $[-358.14, -357.93]$

C. $[-357.85, -357.68]$

D. $[364.15, 364.3]$

E. None of the above

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

$$\frac{-45 + 77i}{-6 + 2i}$$

A. $a \in [9.5, 11.5]$ and $b \in [-373, -371.5]$

B. $a \in [1.5, 3.5]$ and $b \in [-14.5, -13.5]$

C. $a \in [9.5, 11.5]$ and $b \in [-10, -8.5]$

D. $a \in [423, 424.5]$ and $b \in [-10, -8.5]$

E. $a \in [6.5, 8.5]$ and $b \in [37, 40.5]$

---

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

$$\sqrt{\frac{-1170}{5}}$$

A. Not a Real number

B. Irrational

C. Integer

D. Rational

E. Whole

---

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

$$\frac{-72 + 22i}{7 + i}$$

A. $a \in [-10.4, -9.96]$ and $b \in [21.5, 22.5]$

B. $a \in [-482.12, -481.89]$ and $b \in [4, 6]$

C. $a \in [-9.87, -9.61]$ and $b \in [4, 6]$

D. $a \in [-9.87, -9.61]$ and $b \in [224, 228]$

E. $a \in [-10.64, -10.39]$ and $b \in [1, 2.5]$

---

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

$$7 - 13^2 + 9 \div 18 * 8 \div 10$$

A. $[176.02, 176.86]$

B. $[-162.44, -161.93]$

C. $[-161.97, -161.41]$

D. $[175.86, 176.03]$

E. None of the above

---

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

$$\sqrt{\frac{1056}{6}} + \sqrt{70}i$$

A. Nonreal Complex

B. Rational

C. Pure Imaginary

D. Irrational

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.

$$(-3 - 6i)(-8 - 7i)$$

A. $a \in [66, 73]$ and $b \in [24, 32]$

B. $a \in [-24, -16]$ and $b \in [67, 72]$

C. $a \in [20, 25]$ and $b \in [42, 43]$

D. $a \in [66, 73]$ and $b \in [-27, -23]$

E. $a \in [-24, -16]$ and $b \in [-74, -65]$

---

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

$$-\sqrt{\frac{455}{7}}$$

A. Irrational

B. Not a Real number

C. Integer

D. Whole

E. Rational
