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

$$\frac{72 - 44i}{2 + 3i}$$

A. $a \in [34.5, 37]$ and $b \in [-16, -14]$

B. $a \in [0, 1.5]$ and $b \in [-304.5, -303]$

C. $a \in [0, 1.5]$ and $b \in [-24, -23]$

D. $a \in [11.5, 12.5]$ and $b \in [-24, -23]$

E. $a \in [21, 22]$ and $b \in [9.5, 10.5]$

---

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

$$17 - 10 \div 19 * 5 - (2 * 16)$$

A. $[47.5, 49.7]$

B. $[196, 200.9]$

C. $[-17.9, -17.4]$

D. $[-16.4, -12.7]$

E. None of the above

---

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

$$(-3 - 2i)(7 - 10i)$$

A. $a \in [-48, -40]$ and $b \in [-19, -9]$

B. $a \in [-3, 1]$ and $b \in [-45, -43]$

C. $a \in [-48, -40]$ and $b \in [16, 18]$

D. $a \in [-3, 1]$ and $b \in [40, 49]$

E. $a \in [-24, -18]$ and $b \in [18, 21]$

---

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

$$\frac{\sqrt{187}}{6} + \sqrt{-9}i$$

A. Nonreal Complex

B. Irrational

C. Rational

D. Pure Imaginary

E. Not a Complex Number

---

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

$$-\sqrt{\frac{115600}{400}}$$

A. Irrational

B. Integer

C. Not a Real number

D. Rational

E. Whole

---

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

$$\frac{9 - 22i}{4 - 8i}$$

A. $a \in [1.4, 2.3]$ and $b \in [2, 3]$

B. $a \in [2.5, 3.05]$ and $b \in [-1, 1]$

C. $a \in [-1.9, -1.2]$ and $b \in [-2.5, -0.5]$

D. $a \in [211.9, 212.1]$ and $b \in [-1, 1]$

E. $a \in [2.5, 3.05]$ and $b \in [-17, -15.5]$

---

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

$$\sqrt{\frac{0}{15}} + \sqrt{3}i$$

A. Irrational

B. Pure Imaginary

C. Nonreal Complex

D. Not a Complex Number

E. Rational

---

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

$$\sqrt{\frac{2210}{10}}$$

A. Not a Real number

B. Rational

C. Whole

D. Irrational

E. Integer

---

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

$$6 - 2^2 + 3 \div 7 * 16 \div 1$$

A. $[16.67, 18.75]$

B. $[0.61, 2.57]$

C. $[7.88, 9.48]$

D. $[9.08, 11.1]$

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.

$$(-8 - 6i)(7 + 9i)$$

A. $a \in [-2, -1]$ and $b \in [111, 116]$

B. $a \in [-111, -108]$ and $b \in [29, 31]$

C. $a \in [-57, -54]$ and $b \in [-56, -51]$

D. $a \in [-111, -108]$ and $b \in [-32, -26]$

E. $a \in [-2, -1]$ and $b \in [-119, -111]$

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