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

$$\frac{36 + 66i}{-2 - i}$$

A. $a \in [-140, -137.5]$ and $b \in [-21, -19]$

B. $a \in [-28, -27]$ and $b \in [-21, -19]$

C. $a \in [-28, -27]$ and $b \in [-97, -94.5]$

D. $a \in [-1.5, -0.5]$ and $b \in [-35, -33.5]$

E. $a \in [-18.5, -17.5]$ and $b \in [-67.5, -65]$

---

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

$$(-10 - 2i)(-5 - 8i)$$

A. $a \in [49, 52]$ and $b \in [15, 18]$

B. $a \in [31, 38]$ and $b \in [-98, -88]$

C. $a \in [31, 38]$ and $b \in [89, 94]$

D. $a \in [63, 71]$ and $b \in [69, 74]$

E. $a \in [63, 71]$ and $b \in [-71, -68]$

---

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

$$4 - 5 \div 8 * 11 - (16 * 12)$$

A. $[-197.88, -188.88]$

B. $[191.94, 199.94]$

C. $[-191.06, -183.06]$

D. $[-228.5, -222.5]$

E. None of the above

---

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

$$\frac{-20}{-9} + \sqrt{-16}i$$

A. Irrational

B. Pure Imaginary

C. Rational

D. Nonreal Complex

E. Not a Complex Number

---

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

$$\frac{54 + 11i}{-2 - 3i}$$

A. $a \in [-6.5, -5]$ and $b \in [-14.5, -12]$

B. $a \in [-11, -10.5]$ and $b \in [10, 12.5]$

C. $a \in [-142, -140]$ and $b \in [10, 12.5]$

D. $a \in [-11, -10.5]$ and $b \in [139.5, 140.5]$

E. $a \in [-28, -25.5]$ and $b \in [-4.5, -2.5]$

---

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

$$\sqrt{\frac{1638}{0}} + \sqrt{176}i$$

A. Rational

B. Irrational

C. Not a Complex Number

D. Pure Imaginary

E. Nonreal Complex

---

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

$$(10 - 5i)(-4 + 3i)$$

A. $a \in [-28, -22]$ and $b \in [-52, -49]$

B. $a \in [-28, -22]$ and $b \in [49, 54]$

C. $a \in [-55, -54]$ and $b \in [-12, -9]$

D. $a \in [-55, -54]$ and $b \in [9, 11]$

E. $a \in [-44, -36]$ and $b \in [-15, -13]$

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

$$\sqrt{\frac{7}{0}}$$

A. Integer

B. Whole

C. Irrational

D. Rational

E. Not a Real number

---

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

$$\sqrt{\frac{144400}{400}}$$

A. Integer

B. Irrational

C. Rational

D. Not a Real number

E. Whole

---

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

$$16 - 18 \div 10 * 3 - (5 * 19)$$

A. $[104.4, 109.4]$

B. $[-84.4, -81.4]$

C. $[-81.6, -77.6]$

D. $[108.4, 112.4]$

E. None of the above
