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

$$(-7 + 3i)(-4 - 10i)$$

A. $a \in [24, 31]$ and $b \in [-31, -27]$

B. $a \in [-3, 3]$ and $b \in [76, 84]$

C. $a \in [57, 61]$ and $b \in [-65, -57]$

D. $a \in [-3, 3]$ and $b \in [-85, -75]$

E. $a \in [57, 61]$ and $b \in [58, 62]$

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

$$\sqrt{\frac{-660}{0}} + \sqrt{143}$$

A. Pure Imaginary

B. Not a Complex Number

C. Irrational

D. Nonreal Complex

E. Rational

---

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

$$\frac{54 - 77i}{-2 + 5i}$$

A. $a \in [-28.5, -26.5]$ and $b \in [-16.5, -14.5]$

B. $a \in [9, 10]$ and $b \in [14, 16]$

C. $a \in [-493.5, -492]$ and $b \in [-4.5, -3]$

D. $a \in [-17.5, -16]$ and $b \in [-4.5, -3]$

E. $a \in [-17.5, -16]$ and $b \in [-116.5, -115]$

---

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

$$-\sqrt{\frac{300}{5}}$$

A. Not a Real number

B. Whole

C. Irrational

D. Integer

E. Rational

---

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

$$\frac{54 + 22i}{-4 - 3i}$$

A. $a \in [-7, -5.5]$ and $b \in [-10.5, -8.5]$

B. $a \in [-11.5, -10.5]$ and $b \in [73.5, 75]$

C. $a \in [-14.5, -13]$ and $b \in [-8, -6.5]$

D. $a \in [-282.5, -280.5]$ and $b \in [2.5, 4]$

E. $a \in [-11.5, -10.5]$ and $b \in [2.5, 4]$

---

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

$$13 - 19 \div 5 * 4 - (2 * 9)$$

A. $[-20.2, -18.2]$

B. $[-7.95, -3.95]$

C. $[29.05, 34.05]$

D. $[-42.8, -34.8]$

E. None of the above

---

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

$$\sqrt{\frac{46656}{81}}$$

A. Integer

B. Rational

C. Not a Real number

D. Whole

E. Irrational

---

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

$$13 - 19^2 + 18 \div 12 * 11 \div 3$$

A. $[-350.95, -342.95]$

B. $[-347.5, -336.5]$

C. $[376.5, 382.5]$

D. $[372.05, 375.05]$

E. None of the above

---

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

$$\sqrt{\frac{-880}{0}}i + \sqrt{130}i$$

A. Not a Complex Number

B. Rational

C. Nonreal Complex

D. Pure Imaginary

E. Irrational

---

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

$$(10 - 5i)(-6 - 7i)$$

A. $a \in [-97, -90]$ and $b \in [38, 46]$

B. $a \in [-60, -56]$ and $b \in [35, 36]$

C. $a \in [-29, -24]$ and $b \in [-101, -97]$

D. $a \in [-97, -90]$ and $b \in [-42, -34]$

E. $a \in [-29, -24]$ and $b \in [97, 101]$
