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

$$14 - 2^2 + 18 \div 19 * 10 \div 16$$

A. $[16.2, 18.38]$

B. $[18.18, 19.28]$

C. $[9.91, 10.54]$

D. $[10.22, 10.67]$

E. None of the above

---

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

$$\sqrt{\frac{-2475}{0}}i + \sqrt{55}i$$

A. Not a Complex Number

B. Irrational

C. Rational

D. Nonreal Complex

E. Pure Imaginary

---

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

$$\frac{54 - 33i}{4 - 7i}$$

A. $a \in [6.5, 8.5]$ and $b \in [245, 247]$

B. $a \in [13, 14]$ and $b \in [4, 5.5]$

C. $a \in [445.5, 448.5]$ and $b \in [3, 4]$

D. $a \in [-1.5, 0]$ and $b \in [-9, -7]$

E. $a \in [6.5, 8.5]$ and $b \in [3, 4]$

---

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

$$\sqrt{\frac{-756}{9}}i + \sqrt{187}i$$

A. Not a Complex Number

B. Pure Imaginary

C. Rational

D. Irrational

E. Nonreal Complex

---

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

$$\sqrt{\frac{660}{12}}$$

A. Irrational

B. Not a Real number

C. Rational

D. Whole

E. Integer

---

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

$$(6 + 4i)(-8 - 2i)$$

A. $a \in [-65, -54]$ and $b \in [19, 25]$

B. $a \in [-43, -33]$ and $b \in [-48, -40]$

C. $a \in [-53, -47]$ and $b \in [-12, -6]$

D. $a \in [-43, -33]$ and $b \in [37, 46]$

E. $a \in [-65, -54]$ and $b \in [-20, -16]$

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

$$2 - 3 \div 4 * 9 - (5 * 18)$$

A. $[89.92, 94.92]$

B. $[-97.75, -91.75]$

C. $[-90.08, -86.08]$

D. $[-175.5, -170.5]$

E. None of the above

---

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

$$\sqrt{\frac{-882}{7}}$$

A. Integer

B. Whole

C. Rational

D. Irrational

E. Not a Real number

---

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

$$\frac{-45 - 77i}{-3 - 8i}$$

A. $a \in [10, 11]$ and $b \in [-129.5, -128]$

B. $a \in [10, 11]$ and $b \in [-3, 0]$

C. $a \in [-7.5, -5.5]$ and $b \in [7.5, 9]$

D. $a \in [13.5, 17.5]$ and $b \in [8.5, 11]$

E. $a \in [749, 751.5]$ and $b \in [-3, 0]$

---

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

$$(5 + 4i)(9 + 10i)$$

A. $a \in [-5, 10]$ and $b \in [81, 91]$

B. $a \in [80, 86]$ and $b \in [-16, -10]$

C. $a \in [41, 50]$ and $b \in [39, 43]$

D. $a \in [80, 86]$ and $b \in [14, 15]$

E. $a \in [-5, 10]$ and $b \in [-92, -82]$
