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

$$11 - 10 \div 6 * 13 - (8 * 12)$$

A. $[-106.67, -102.67]$

B. $[-225, -220]$

C. $[101.87, 112.87]$

D. $[-92.13, -82.13]$

E. None of the above

---

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

$$(-5 + 4i)(6 + 3i)$$

A. $a \in [-27, -17]$ and $b \in [37.2, 40.7]$

B. $a \in [-33, -28]$ and $b \in [9.9, 14.8]$

C. $a \in [-42, -41]$ and $b \in [-10.5, -6.4]$

D. $a \in [-27, -17]$ and $b \in [-39.8, -38.7]$

E. $a \in [-42, -41]$ and $b \in [8.5, 9.7]$

---

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

$$\frac{36 - 11i}{-6 + 3i}$$

A. $a \in [-5.7, -5.2]$ and $b \in [-43, -41.5]$

B. $a \in [-5.7, -5.2]$ and $b \in [-1.5, 0.5]$

C. $a \in [-6.15, -5.75]$ and $b \in [-4, -3]$

D. $a \in [-4.7, -3.55]$ and $b \in [2.5, 4.5]$

E. $a \in [-249.7, -248.95]$ and $b \in [-1.5, 0.5]$

---

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

$$\frac{20}{-9} + \sqrt{-49}i$$

A. Pure Imaginary

B. Irrational

C. Nonreal Complex

D. Rational

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.

$$(4 - 10i)(-9 + 6i)$$

A. $a \in [-100, -94]$ and $b \in [-71, -63]$

B. $a \in [19, 30]$ and $b \in [-114, -113]$

C. $a \in [19, 30]$ and $b \in [105, 120]$

D. $a \in [-100, -94]$ and $b \in [65, 72]$

E. $a \in [-37, -29]$ and $b \in [-63, -57]$

---

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

$$\frac{-72 - 33i}{-7 + 6i}$$

A. $a \in [3, 4.5]$ and $b \in [662, 663.5]$

B. $a \in [3, 4.5]$ and $b \in [6.5, 8.5]$

C. $a \in [305, 306.5]$ and $b \in [6.5, 8.5]$

D. $a \in [7.5, 9]$ and $b \in [-3, -2]$

E. $a \in [10, 12]$ and $b \in [-7, -4.5]$

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

$$9 - 5 \div 15 * 12 - (18 * 4)$$

A. $[-53.2, -48.2]$

B. $[80.9, 82]$

C. $[-63.8, -62]$

D. $[-70.4, -64.2]$

E. None of the above

---

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

$$\sqrt{\frac{93636}{289}}$$

A. Whole

B. Integer

C. Not a Real number

D. Rational

E. Irrational

---

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

$$-\sqrt{\frac{74529}{441}}$$

A. Integer

B. Whole

C. Irrational

D. Not a Real number

E. Rational

---

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

$$\frac{0}{7\pi} + \sqrt{5}i$$

A. Not a Complex Number

B. Nonreal Complex

C. Pure Imaginary

D. Irrational

E. Rational
