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

$$20 - 2 \div 12 * 13 - (19 * 10)$$

A. $[-12.8, -9.3]$

B. $[207.5, 212.6]$

C. $[-171.7, -168.3]$

D. $[-173.4, -171.5]$

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.

$$(8 + 5i)(6 + 4i)$$

A. $a \in [65, 75]$ and $b \in [-7, 1]$

B. $a \in [24, 32]$ and $b \in [61, 66]$

C. $a \in [65, 75]$ and $b \in [-1, 9]$

D. $a \in [24, 32]$ and $b \in [-69, -58]$

E. $a \in [47, 49]$ and $b \in [19, 21]$

---

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

$$\sqrt{\frac{1053}{9}} + \sqrt{143}i$$

A. Irrational

B. Not a Complex Number

C. Pure Imaginary

D. Rational

E. Nonreal Complex

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

$$\sqrt{\frac{19600}{196}}$$

A. Whole

B. Integer

C. Rational

D. Irrational

E. Not a Real number

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

$$\sqrt{\frac{0}{144}} + \sqrt{10}i$$

A. Rational

B. Pure Imaginary

C. Irrational

D. Nonreal Complex

E. Not a Complex Number

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

$$1 - 18 \div 16 * 4 - (9 * 8)$$

A. $[71.72, 73.72]$

B. $[-82.5, -71.5]$

C. $[-75.28, -70.28]$

D. $[-101, -96]$

E. None of the above

---

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

$$(5 + 2i)(8 - 9i)$$

A. $a \in [20, 28]$ and $b \in [59, 62]$

B. $a \in [40, 43]$ and $b \in [-21, -7]$

C. $a \in [20, 28]$ and $b \in [-67, -59]$

D. $a \in [57, 60]$ and $b \in [28, 30]$

E. $a \in [57, 60]$ and $b \in [-30, -23]$

---

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

$$\sqrt{\frac{1980}{10}}$$

A. Whole

B. Irrational

C. Integer

D. Rational

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.

$$\frac{-18 - 11i}{6 - 5i}$$

A. $a \in [-53.25, -52.45]$ and $b \in [-4, -1]$

B. $a \in [-3.1, -2.7]$ and $b \in [1, 3.5]$

C. $a \in [-1.6, -0.45]$ and $b \in [-4, -1]$

D. $a \in [-1.6, -0.45]$ and $b \in [-156.5, -155]$

E. $a \in [-2.85, -2.6]$ and $b \in [-0.5, 0.5]$

---

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

$$\frac{-9 + 22i}{6 - 7i}$$

A. $a \in [-2.6, -2.3]$ and $b \in [68.5, 70]$

B. $a \in [0.65, 1.3]$ and $b \in [2, 2.5]$

C. $a \in [-2.6, -2.3]$ and $b \in [0, 2]$

D. $a \in [-1.9, -0.75]$ and $b \in [-3.5, -2]$

E. $a \in [-208.2, -207.95]$ and $b \in [0, 2]$
