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

$$-\sqrt{\frac{81}{625}}$$

A. Whole

B. Integer

C. Irrational

D. Rational

E. Not a Real number

---

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

$$(3 - 8i)(6 + 4i)$$

A. $a \in [-14, -9]$ and $b \in [57, 62]$

B. $a \in [16, 20]$ and $b \in [-34, -29]$

C. $a \in [-14, -9]$ and $b \in [-64, -53]$

D. $a \in [48, 58]$ and $b \in [28, 37]$

E. $a \in [48, 58]$ and $b \in [-40, -33]$

---

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

$$\sqrt{\frac{1190}{10}} + \sqrt{143}i$$

A. Nonreal Complex

B. Irrational

C. Not a Complex Number

D. Rational

E. Pure Imaginary

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

$$\frac{9 - 44i}{-2 + 3i}$$

A. $a \in [-151, -148]$ and $b \in [3.5, 5]$

B. $a \in [8, 9.5]$ and $b \in [8, 10.5]$

C. $a \in [-12.5, -10]$ and $b \in [60.5, 61.5]$

D. $a \in [-5.5, -4]$ and $b \in [-15.5, -13.5]$

E. $a \in [-12.5, -10]$ and $b \in [3.5, 5]$

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

$$6 - 12^2 + 8 \div 20 * 7 \div 18$$

A. $[-138.19, -137.89]$

B. $[150.06, 150.37]$

C. $[-137.85, -137.52]$

D. $[149.71, 150.09]$

E. None of the above

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

$$(-2 + 8i)(-5 + 6i)$$

A. $a \in [57, 61]$ and $b \in [-31, -22]$

B. $a \in [9, 12]$ and $b \in [45, 51]$

C. $a \in [-41, -37]$ and $b \in [-56, -46]$

D. $a \in [57, 61]$ and $b \in [27, 29]$

E. $a \in [-41, -37]$ and $b \in [50, 53]$

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

$$\frac{\sqrt{143}}{8} + 4i^2$$

A. Irrational

B. Not a Complex Number

C. Nonreal Complex

D. Rational

E. Pure Imaginary

---

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

$$\sqrt{\frac{1040}{13}}$$

A. Integer

B. Rational

C. Not a Real number

D. Whole

E. Irrational

---

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

$$17 - 7^2 + 8 \div 2 * 3 \div 13$$

A. $[-31.36, -30.93]$

B. $[-32.85, -31.71]$

C. $[65.48, 66.41]$

D. $[66.81, 67.15]$

E. None of the above

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

$$\frac{-45 + 66i}{3 + 2i}$$

A. $a \in [-3.5, -2.5]$ and $b \in [20.5, 23.5]$

B. $a \in [-1, 0.5]$ and $b \in [20.5, 23.5]$

C. $a \in [-16, -14.5]$ and $b \in [32.5, 33.5]$

D. $a \in [-21.5, -19.5]$ and $b \in [7.5, 9.5]$

E. $a \in [-1, 0.5]$ and $b \in [287.5, 289]$
