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

$$\sqrt{\frac{0}{6}} + \sqrt{10}i$$

A. Rational

B. Irrational

C. Not a Complex Number

D. Pure Imaginary

E. Nonreal Complex

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

$$(6 - 8i)(7 - 3i)$$

A. $a \in [62, 72]$ and $b \in [35, 42]$

B. $a \in [13, 23]$ and $b \in [69, 76]$

C. $a \in [62, 72]$ and $b \in [-38, -34]$

D. $a \in [13, 23]$ and $b \in [-75, -71]$

E. $a \in [42, 45]$ and $b \in [23, 26]$

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

$$\frac{36 + 77i}{-8 + 2i}$$

A. $a \in [-2.5, -1]$ and $b \in [-10.5, -9]$

B. $a \in [-5, -4]$ and $b \in [38, 39]$

C. $a \in [-2.5, -1]$ and $b \in [-689.5, -687.5]$

D. $a \in [-7.5, -5]$ and $b \in [-8.5, -7.5]$

E. $a \in [-135, -133.5]$ and $b \in [-10.5, -9]$

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

$$\frac{36 + 33i}{2 + 8i}$$

A. $a \in [4.5, 6]$ and $b \in [-222.4, -221.9]$

B. $a \in [17, 18.5]$ and $b \in [3.8, 5.1]$

C. $a \in [-4, -1.5]$ and $b \in [4.65, 5.45]$

D. $a \in [335, 336.5]$ and $b \in [-4, -3.15]$

E. $a \in [4.5, 6]$ and $b \in [-4, -3.15]$

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

$$20 - 15 \div 17 * 18 - (12 * 13)$$

A. $[-109.47, -95.47]$

B. $[-154.88, -149.88]$

C. $[-137.05, -127.05]$

D. $[171.95, 180.95]$

E. None of the above

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

$$\sqrt{\frac{144}{529}}$$

A. Not a Real number

B. Irrational

C. Integer

D. Rational

E. Whole

---

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

$$-\sqrt{\frac{57600}{400}}$$

A. Not a Real number

B. Whole

C. Rational

D. Irrational

E. Integer

---

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

$$\sqrt{\frac{0}{289}} + \sqrt{8}i$$

A. Pure Imaginary

B. Irrational

C. Not a Complex Number

D. Nonreal Complex

E. Rational

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

$$(-3 - 6i)(-7 - 5i)$$

A. $a \in [-9, -1]$ and $b \in [-64, -52]$

B. $a \in [-9, -1]$ and $b \in [54, 60]$

C. $a \in [46, 52]$ and $b \in [22, 28]$

D. $a \in [46, 52]$ and $b \in [-27, -23]$

E. $a \in [17, 28]$ and $b \in [28, 31]$

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

$$5 - 10^2 + 4 \div 20 * 14 \div 8$$

A. $[-94.89, -94.41]$

B. $[105.16, 105.51]$

C. $[-95.32, -94.66]$

D. $[104.7, 105.1]$

E. None of the above
