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

$$\sqrt{\frac{78400}{400}}$$

A. Rational

B. Integer

C. Irrational

D. Not a Real number

E. Whole

---

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

$$(7 - 2i)(-10 - 3i)$$

A. $a \in [-74, -69]$ and $b \in [5.7, 6.6]$

B. $a \in [-80, -75]$ and $b \in [0.8, 1.2]$

C. $a \in [-67, -60]$ and $b \in [39.9, 41.6]$

D. $a \in [-67, -60]$ and $b \in [-41.8, -39.7]$

E. $a \in [-80, -75]$ and $b \in [-1.1, 0.5]$

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

$$\frac{-54 + 11i}{-7 - 3i}$$

A. $a \in [344.6, 345.3]$ and $b \in [-4.27, -4.02]$

B. $a \in [7.55, 8.5]$ and $b \in [-3.81, -3.6]$

C. $a \in [5.45, 6.45]$ and $b \in [-4.27, -4.02]$

D. $a \in [5.45, 6.45]$ and $b \in [-239.1, -238.97]$

E. $a \in [6.65, 7.15]$ and $b \in [1.43, 1.6]$

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

$$12 - 3 \div 8 * 20 - (4 * 13)$$

A. $[-48.5, -45.5]$

B. $[3.5, 8.5]$

C. $[-41.02, -35.02]$

D. $[60.98, 64.98]$

E. None of the above

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

$$-\sqrt{\frac{400}{289}} + 25i^2$$

A. Irrational

B. Nonreal Complex

C. Not a Complex Number

D. Pure Imaginary

E. Rational

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

$$\frac{18 - 77i}{-5 - i}$$

A. $a \in [-6.5, -5.5]$ and $b \in [13.5, 15]$

B. $a \in [-5.5, -2]$ and $b \in [76, 78.5]$

C. $a \in [-1.5, 0.5]$ and $b \in [402, 403.5]$

D. $a \in [-13.5, -12.5]$ and $b \in [15, 17]$

E. $a \in [-1.5, 0.5]$ and $b \in [15, 17]$

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

$$\sqrt{\frac{32400}{81}}$$

A. Whole

B. Rational

C. Integer

D. Irrational

E. Not a Real number

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

$$(-4 - 5i)(-7 - 6i)$$

A. $a \in [-2, -1]$ and $b \in [57, 62]$

B. $a \in [-2, -1]$ and $b \in [-60, -57]$

C. $a \in [57, 63]$ and $b \in [-12, -1]$

D. $a \in [57, 63]$ and $b \in [8, 16]$

E. $a \in [25, 34]$ and $b \in [29, 35]$

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

$$\sqrt{\frac{121}{0}} + \sqrt{117}i$$

A. Pure Imaginary

B. Nonreal Complex

C. Rational

D. Irrational

E. Not a Complex Number

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

$$4 - 8^2 + 14 \div 13 * 19 \div 6$$

A. $[71.41, 76.41]$

B. $[-61.99, -56.99]$

C. $[64.01, 70.01]$

D. $[-58.59, -53.59]$

E. None of the above
