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

$$\sqrt{\frac{-450}{0}} + \sqrt{130}$$

A. Rational

B. Irrational

C. Pure Imaginary

D. Not a Complex Number

E. Nonreal Complex

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

$$7 - 2 \div 20 * 6 - (18 * 14)$$

A. $[-245.31, -244.11]$

B. $[-162.58, -161.38]$

C. $[258.34, 259.56]$

D. $[-245.62, -245.55]$

E. None of the above

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

$$\frac{18}{5} + \sqrt{65}i$$

A. Nonreal Complex

B. Not a Complex Number

C. Rational

D. Irrational

E. Pure Imaginary

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

$$\frac{9 + 55i}{-8 + 6i}$$

A. $a \in [-2, 0]$ and $b \in [8.95, 9.8]$

B. $a \in [-6, -4]$ and $b \in [-4.25, -3.4]$

C. $a \in [2, 4]$ and $b \in [-5.3, -4.35]$

D. $a \in [257.5, 259]$ and $b \in [-5.3, -4.35]$

E. $a \in [2, 4]$ and $b \in [-494.15, -493.75]$

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

$$\frac{54 - 77i}{-1 + 4i}$$

A. $a \in [-22, -21]$ and $b \in [-9, -7.5]$

B. $a \in [-55, -53]$ and $b \in [-21, -18.5]$

C. $a \in [14.5, 15.5]$ and $b \in [16, 18]$

D. $a \in [-22, -21]$ and $b \in [-140.5, -138]$

E. $a \in [-363, -361.5]$ and $b \in [-9, -7.5]$

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

$$11 - 5^2 + 4 \div 16 * 14 \div 8$$

A. $[35.89, 36.11]$

B. $[-14.25, -13.84]$

C. $[36.09, 36.83]$

D. $[-13.66, -13.37]$

E. None of the above

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

$$(7 - 9i)(-10 - 8i)$$

A. $a \in [-144, -140]$ and $b \in [-34, -33]$

B. $a \in [-75, -65]$ and $b \in [72, 76]$

C. $a \in [-144, -140]$ and $b \in [30, 36]$

D. $a \in [-4, 5]$ and $b \in [-152, -145]$

E. $a \in [-4, 5]$ and $b \in [141, 150]$

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

$$\sqrt{\frac{30625}{625}}$$

A. Irrational

B. Not a Real number

C. Rational

D. Whole

E. Integer

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

$$(-3 - 2i)(-5 - 8i)$$

A. $a \in [-3, 0]$ and $b \in [-39, -28]$

B. $a \in [-3, 0]$ and $b \in [31, 38]$

C. $a \in [27, 36]$ and $b \in [-14, -10]$

D. $a \in [27, 36]$ and $b \in [10, 15]$

E. $a \in [14, 21]$ and $b \in [16, 21]$

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

$$-\sqrt{\frac{18}{0}}$$

A. Integer

B. Not a Real number

C. Whole

D. Rational

E. Irrational
