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

$$17 - 16 \div 15 * 9 - (6 * 20)$$

A. $[-110.12, -97.12]$

B. $[27, 31]$

C. $[136.88, 141.88]$

D. $[-117.6, -110.6]$

E. None of the above

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

$$\sqrt{\frac{74529}{441}}$$

A. Not a Real number

B. Irrational

C. Integer

D. Rational

E. Whole

---

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

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

A. $a \in [-38, -29]$ and $b \in [29.6, 33.4]$

B. $a \in [46, 47]$ and $b \in [-1.1, 0.5]$

C. $a \in [5, 8]$ and $b \in [38, 41]$

D. $a \in [-38, -29]$ and $b \in [-32.6, -30.4]$

E. $a \in [46, 47]$ and $b \in [-0.1, 6.2]$

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

$$-\sqrt{\frac{484}{81}}$$

A. Integer

B. Rational

C. Whole

D. Irrational

E. Not a Real number

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

$$3 - 11 \div 16 * 15 - (10 * 19)$$

A. $[190.95, 194.95]$

B. $[-190.05, -181.05]$

C. $[-330.94, -325.94]$

D. $[-200.31, -190.31]$

E. None of the above

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

$$\frac{0}{-8\pi} + \sqrt{6}i$$

A. Pure Imaginary

B. Rational

C. Nonreal Complex

D. Irrational

E. Not a Complex Number

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

$$(6 + 10i)(-9 + 2i)$$

A. $a \in [-80, -72]$ and $b \in [78, 82]$

B. $a \in [-58, -50]$ and $b \in [20, 25]$

C. $a \in [-36, -31]$ and $b \in [102, 105]$

D. $a \in [-36, -31]$ and $b \in [-103, -98]$

E. $a \in [-80, -72]$ and $b \in [-82, -77]$

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

$$\frac{-9 - 44i}{-2 - 7i}$$

A. $a \in [5.5, 6.5]$ and $b \in [24, 26]$

B. $a \in [5.5, 6.5]$ and $b \in [0, 2]$

C. $a \in [-6, -4.5]$ and $b \in [2, 4]$

D. $a \in [4, 5.5]$ and $b \in [5.5, 7.5]$

E. $a \in [325.5, 326.5]$ and $b \in [0, 2]$

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

$$\sqrt{\frac{0}{36}} + \sqrt{5}i$$

A. Not a Complex Number

B. Nonreal Complex

C. Pure Imaginary

D. Rational

E. Irrational

---

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

$$\frac{45 + 11i}{-3 - 4i}$$

A. $a \in [-7.5, -6.5]$ and $b \in [4.5, 6]$

B. $a \in [-180, -178]$ and $b \in [4.5, 6]$

C. $a \in [-4, -2.5]$ and $b \in [-10.5, -8]$

D. $a \in [-7.5, -6.5]$ and $b \in [145, 148]$

E. $a \in [-16, -14.5]$ and $b \in [-3.5, -2]$
