

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

$$-\sqrt{\frac{9216}{144}}$$

- A. Irrational
  - B. Whole
  - C. Rational
  - D. Not a Real number
  - E. Integer
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2. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 18 \div 8 * 13 - (15 * 7)$$

- A.  $[-105.17, -98.17]$
  - B.  $[103.83, 106.83]$
  - C.  $[-133.25, -127.25]$
  - D.  $[-306.75, -297.75]$
  - E. None of the above
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3. Simplify the expression below and choose the interval the simplification is contained within.

$$10 - 7 \div 5 * 12 - (14 * 4)$$

- A.  $[-49.12, -44.12]$
- B.  $[-85.2, -81.2]$
- C.  $[-64.8, -61.8]$
- D.  $[62.88, 66.88]$
- E. None of the above

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

$$\sqrt{\frac{1584}{12}} + \sqrt{156}i$$

- A. Nonreal Complex
  - B. Pure Imaginary
  - C. Irrational
  - D. Not a Complex Number
  - E. Rational
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5. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(3 + 9i)(5 - 4i)$$

- A.  $a \in [49, 55]$  and  $b \in [-35.3, -32.9]$
  - B.  $a \in [-26, -18]$  and  $b \in [56.9, 59.9]$
  - C.  $a \in [12, 17]$  and  $b \in [-37.1, -35.5]$
  - D.  $a \in [49, 55]$  and  $b \in [32.3, 33.6]$
  - E.  $a \in [-26, -18]$  and  $b \in [-57.3, -53.8]$
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6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{63 + 11i}{2 - 8i}$$

- A.  $a \in [37.5, 39]$  and  $b \in [7, 8.5]$
- B.  $a \in [-0.5, 1]$  and  $b \in [7, 8.5]$
- C.  $a \in [30, 33]$  and  $b \in [-1.5, -1]$

D.  $a \in [-0.5, 1]$  and  $b \in [525.5, 527]$

E.  $a \in [1.5, 4.5]$  and  $b \in [-7.5, -6.5]$

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

$$\frac{-13}{20} + \sqrt{234}i$$

- A. Pure Imaginary
- B. Nonreal Complex
- C. Not a Complex Number
- D. Rational
- E. Irrational

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

$$(4 + 9i)(-6 - 3i)$$

- A.  $a \in [-57, -48]$  and  $b \in [-45, -39]$
- B.  $a \in [3, 5]$  and  $b \in [60, 69]$
- C.  $a \in [-29, -17]$  and  $b \in [-32, -22]$
- D.  $a \in [-57, -48]$  and  $b \in [38, 44]$
- E.  $a \in [3, 5]$  and  $b \in [-68, -62]$

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

$$\frac{-63 - 44i}{-5 + i}$$

- A.  $a \in [270.5, 272.5]$  and  $b \in [10, 11.5]$

- B.  $a \in [9, 11]$  and  $b \in [280.5, 284]$
  - C.  $a \in [12, 13.5]$  and  $b \in [-44.5, -43]$
  - D.  $a \in [13, 15.5]$  and  $b \in [5.5, 6.5]$
  - E.  $a \in [9, 11]$  and  $b \in [10, 11.5]$
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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{279841}{529}}$$

- A. Irrational
  - B. Not a Real number
  - C. Integer
  - D. Whole
  - E. Rational
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