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

$$10 - 7 \div 1 * 5 - (11 * 17)$$

A. $[-215, -203]$

B. $[184.6, 197.6]$

C. $[-178.4, -177.4]$

D. $[-612, -610]$

E. None of the above

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

$$(-4 + 9i)(-6 - 10i)$$

A. $a \in [24, 27]$ and $b \in [-93, -87]$

B. $a \in [113, 116]$ and $b \in [-18, -9]$

C. $a \in [-70, -65]$ and $b \in [93, 99]$

D. $a \in [-70, -65]$ and $b \in [-95, -92]$

E. $a \in [113, 116]$ and $b \in [11, 20]$

---

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

$$\frac{18 - 33i}{-8 - i}$$

A. $a \in [-1.9, -1.15]$ and $b \in [281.75, 282.6]$

B. $a \in [-3.95, -2.35]$ and $b \in [3.75, 3.85]$

C. $a \in [-1.9, -1.15]$ and $b \in [3.85, 4.4]$

D. $a \in [-2.65, -2.2]$ and $b \in [32.6, 33.65]$

E. $a \in [-111.15, -110]$ and $b \in [3.85, 4.4]$

---

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

$$\frac{\sqrt{70}}{15} + \sqrt{-4}i$$

A. Irrational

B. Pure Imaginary

C. Not a Complex Number

D. Nonreal Complex

E. Rational

---

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

$$(4 + 9i)(-8 + 5i)$$

A. $a \in [11, 21]$ and $b \in [91, 94]$

B. $a \in [-37, -30]$ and $b \in [45, 46]$

C. $a \in [-78, -75]$ and $b \in [52, 58]$

D. $a \in [-78, -75]$ and $b \in [-56, -51]$

E. $a \in [11, 21]$ and $b \in [-93, -87]$

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

$$\frac{-9 + 22i}{6 + 3i}$$

A. $a \in [11, 12.5]$ and $b \in [2.5, 5]$

B. $a \in [-3, -2]$ and $b \in [1, 3]$

C. $a \in [-0.5, 0.5]$ and $b \in [158, 159.5]$

D. $a \in [-0.5, 0.5]$ and $b \in [2.5, 5]$

E. $a \in [-2, -1]$ and $b \in [5.5, 7.5]$

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

$$4 - 7 \div 11 * 3 - (17 * 20)$$

A. $[-339.21, -337.19]$

B. $[-337.32, -335.8]$

C. $[343.13, 343.92]$

D. $[-300.51, -297.85]$

E. None of the above

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

$$-\sqrt{\frac{-1859}{13}}$$

A. Rational

B. Integer

C. Irrational

D. Not a Real number

E. Whole

---

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

$$-\sqrt{\frac{-1176}{14}}$$

A. Not a Real number

B. Irrational

C. Rational

D. Integer

E. Whole

---

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

$$\sqrt{\frac{-880}{5}} + \sqrt{126}$$

A. Not a Complex Number

B. Nonreal Complex

C. Rational

D. Pure Imaginary

E. Irrational
