

NAME: _____

P.I. A2.N.9: Perform arithmetic operations on complex numbers and write the answer in the form $a+bi$. Note: This includes simplifying expressions with complex denominators

1. Divide and simplify to the form $a + bi$: $\frac{4-5i}{2+4i}$

[A] $-\frac{3}{5} - \frac{13}{10}i$

[B] $\frac{7}{5} + \frac{3}{10}i$

[C] $2 - \frac{5}{4}i$

[D] none of these

3. Divide and simplify to the form $a + bi$: $\frac{2+i}{8-8i}$

[A] $\frac{3}{16} - \frac{1}{16}i$

[B] $\frac{1}{16} + \frac{3}{16}i$

[C] $\frac{1}{4} + \frac{1}{8}i$

[D] none of these

Divide.

4. $\frac{-2-4i}{6-2i}$

2. Divide and simplify to the form $a + bi$: $\frac{4+4i}{2-9i}$

[A] $\frac{44}{85} - \frac{28}{85}i$

[B] $-\frac{28}{85} + \frac{44}{85}i$

[C] $2 + \frac{4}{9}i$

[D] none of these

5. $\frac{-2+10i}{-6-i}$

NAME: _____

6. Find the mean of this set of numbers:
 $3i, -2i, 5 + 7i, 4 + 2i, 1 - 5i$

9.
$$\frac{\sqrt{-3}\sqrt{-3} - \sqrt{-64} + \sqrt{-9}\sqrt{-9}\sqrt{9}}{7 + 6i^3}$$

Simplify:

7.
$$\frac{2 + 3i - 3i^3}{1 - i}$$

[A] $2 + 4i$

[B] $-2 + 4i$

[C] $2 - 4i$

[D] $-2 - 4i$

10.
$$\frac{5i^2 + 4i^4 + 3i^3}{4 - 2i^3 + \sqrt{-16}}$$

8.
$$\frac{1 - 2i + i^3}{-1 + i}$$

[1] \underline{A}

[2] \underline{B}

[3] \underline{B}

[4] $\underline{\frac{-1-7i}{10}}$

[5] $\underline{\frac{2-62i}{37}}$

[6] $\underline{2+i}$

[7] \underline{B}

[8] $\underline{-2+i}$

[9] $\underline{\frac{-162-236i}{85}}$

[10] $\underline{\frac{-11-3i}{26}}$