NAME:_____

P.I. A2.N.9: Perform arithmetic operations on complex numbers and write the answer in the form a+bi

Multiply:

1. $(-8-i)(-1-5i)$

   [A] $13+41i$ [B] $3+39i$

   [C] $13+39i$ [D] $3+41i$

2. $(4+7i)(1-8i)$

   [A] $-52-25i$ [B] $60-25i$

   [C] $60-39i$ [D] $-52-39i$

Simplify:

3. $(2i+2)(4i+2)$

   [A] $12+12i$ [B] $-4+12i$

   [C] $12-12i$ [D] $-4-12i$

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

   [A] $-12-4i$ [B] $-12+4i$

   [C] $-18-4i$ [D] $-18+4i$

5. $(4i-5)(2i-5)$

6. $(i+4)(2i+3)$

7. $(2i+3)(4i-4)$

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8. Compare the quantity in Column A with the quantity in Column B.

$a + bi = (3 + i)(4 - 2i)$

$c + di = (-2 - 3i)(3 + 5i)$

Column A	Column B
b	d

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The two quantities are equal.

[D] The relationship cannot be determined on the basis of the information supplied.

9. Perform the indicated operations and give the answer in standard complex number form:

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

10. Perform the indicated operations and give the answer in standard complex number form:

$-i(7i + 8) - 8(1 + 8i)$

Simplify:

11. $\sqrt{2}\sqrt{-8} + \sqrt{-2}\sqrt{2}\sqrt{-2} + \sqrt{2}\sqrt{-2}\sqrt{-2}$

12. $\sqrt{-3}\sqrt{3}\sqrt{-3} + \sqrt{3}\sqrt{-27} + \sqrt{-3}\sqrt{-3}\sqrt{-3}$

13. $\sqrt{5}\sqrt{-2}\sqrt{-5}\sqrt{2} - \sqrt{5}\sqrt{2}i^2\sqrt{5}\sqrt{2}i^6 - \sqrt{-4}$

14. $\sqrt{-7}\sqrt{5}\sqrt{7}\sqrt{-5} - \sqrt{7}\sqrt{5}i^7\sqrt{7}\sqrt{5}i^8 - \sqrt{-25}$

[1] D

[2] B

[3] B

[4] C

[5] $17-30i$

[6] $10+11i$

[7] $-20+4i$

[8] A

[9] $34+13i$

[10] $-1-72i$

[11] $-4\sqrt{2}+4i$

[12] $-3\sqrt{3}+\left(9-3\sqrt{3}\right)i$

[13] $-20-2i$

[14] $-35+30i$