Algebra II Practice N.CN.A.2: Operations with Complex Numbers

NAME:_____

Simplify:

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

   [A] $3-i$              [B] $11+3i$

   [C] $3+i$              [D] $-26-18i$

2. $(5+9i) + (6+3i)$

   [A] $11-12i$          [B] $3+69i$

   [C] $11+12i$          [D] $-1+6i$

3. $(5+4i) + (1+5i)$

   [A] $6+9i$            [B] $4-i$

   [C] $6-9i$            [D] $-15+29i$

4. Which is equivalent to $9+2i-(6+4i)$?

   [A] $3-2i^2$          [B] $3-6i$

   [C] $15+6i$          [D] $3-2i$

Simplify:

5. $(-3+8i) + (-9+7i)$

6. $(-2+7i) + (-3+4i)$

7. $(-9-8i) - (3+3i)$

8. $3i^2 - 4i^4 + 5i^8 + 3$

9. $3i^6 - 5i^7 - 5i^2 - 4$

10. $5i^4 + 3i^2 + 4i^7 - 4$

Multiply:

11. $(-8-i)(-1-5i)$

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

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

12. $(4+7i)(1-8i)$

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

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

Simplify:

13. $(2i+2)(4i+2)$

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

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

14. $(3i+5)(i-3)$

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

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

15. 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.

Simplify:

16. $(4i-5)(2i-5)$

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

18. $(2i+3)(4i-4)$

19. Perform the indicated operations and give the answer in standard complex number form:
$3i(-8i+5)+ 2(5-i)$

20. Perform the indicated operations and give the answer in standard complex number form:
$-i(7i+8) - 8(1+8i)$

[1]  A

[2]  C

[3]  A

[4]  D

[5]  $-12+15i$

[6]  $-5+11i$

[7]  $-12-11i$

[8]  1

[9]  $-2+5i$

[10]  $-2-4i$

[11]  D

[12]  B

[13]  B

[14]  C

[15]  A

[16]  $17-30i$

[17]  $10+11i$

[18]  $-20+4i$

[19]  $34+13i$

[20]  $-1-72i$