Name: _____

N.CN.A.2: Operations with Complex Numbers 2b

1 For all values of a and b, what is the additive inverse of $a + bi$?

2 The additive inverse of $2 - 3i$ is

3 The product of $5 - 2i$ and i is

4 The expression $(1 + i)^2$ is equivalent to

5 The expression $(2 + i)^2$ is equivalent to

6 Expressed in $a + bi$ form, $(1 + 3i)^2$ is equivalent to

7 The expression $(2 + 3i)^2$ is equal to

8 The value of $(1 - i)^2$ is

9 The expression $(3 - i)^2$ is equivalent to

10 If $f(x) = x^2$, then $f(2 - 3i)$ equals

11 The product of $(2 - 2i)$ and $(2 + 2i)$ is

12 The product of $(3 - 2i)$ and $(7 + 6i)$ is

13 The product of $(-2 + 6i)$ and $(3 + 4i)$ is

14 What is the product of the complex numbers $2 + 3i$ and $1 - 2i$ expressed in simplest terms?

15 If $(3 + 2i) + (2 + bi) = 5 - 4i$, the value of b is

16 The expression $(i^3 - 1)(i^3 + 1)$ is equivalent to

17 Find the additive inverse of $-3 + 2i$.

18 Express and simplify in $a + bi$ form: $(12 + 3i) - (3 - i)$

19 Subtract $(3 - 2i)$ from $(-2 + 3i)$, and express in $a + bi$ form.

20 Express in $a + bi$ form: $2i(i + 3)$

21 Express $3i(1 - i)$ in $a + bi$ form.

22 Express $(3 - 2i)^2$ in $a + bi$ form.

23 Express the product $(3 + 2i)(1 - 3i)$ in $a + bi$ form.

24 Express the product $(2 + i)(4 - 3i)$ in the form $a + bi$.

25 If $4 + 2i - (a + 4i) = 9 - 2i$, find the value of a.

26 Solve for x: $(5 - 2i) - (x + 4i) = 7 - 6i$.

27 Express in simplest $a + bi$ form: $(2 + i)^3$

28 Express the complex number $(1 + 2i)^4$ in $a + bi$ form.

29 Expand and express $(i - 3)^4$ in simplest $a + bi$ form, where i is the imaginary unit.

30 Where i is the imaginary unit, expand and simplify completely $(3 - i)^4$.

N.CN.A.2: Operations with Complex Numbers 2b
Answer Section

1 ANS:
$-a - bi$

REF: 069520siiii

2 ANS:
$-2 + 3i$

REF: 088719siiii

3 ANS:
$2 + 5i$

REF: 089726siii

4 ANS:
$2i$

REF: 089519siii

5 ANS:
$3 + 4i$

REF: 018421siii

6 ANS:
$-8 + 6i$

REF: 069719siii

7 ANS:
$-5 + 12i$

REF: 018923siii

8 ANS:
$-2i$

REF: 019932siii

9 ANS:
$8 - 6i$

REF: 019622siii

10 ANS:
$-5 - 12i$

REF: 088923siii

11 ANS:
8

REF: 068022siii

12 ANS:
$33 + 4i$

REF: 019035siii
13 ANS:
$-30 + 10i$

REF: 069620siii
14 ANS:
$8 - i$

REF: 080322siii
15 ANS:
-6

REF: 018632siii
16 ANS:
-2

REF: 010235siii
17 ANS:
$3 - 2i$

REF: 068803siii
18 ANS:
$9 + 4i$

REF: 019607siii
19 ANS:
$-5 + 5i$

REF: 069609siii
20 ANS:
$-2 + 6i$

REF: 018714siii
21 ANS:
$3 + 3i$

REF: 089012siii
22 ANS:
$5 - 12i$

REF: 069014siii
23 ANS:
$9 - 7i$

REF: 088616siii

24 ANS:
$11 - 2i$

REF: 068911siii

25 ANS:
-5

REF: 019510siii

26 ANS:
-2

REF: 068610siii

27 ANS:
$2 + 11i$

REF: 089339siii

28 ANS:
$-7 - 24i$

REF: 069440siii

29 ANS:
$28 - 96i$

REF: 069940siii

30 ANS:
$28 - 96i$

REF: 080141siii