

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Quiz on Imaginary Numbers

2N1a: Write square roots of negative numbers in imaginary form \_\_\_\_\_/4

2N1b Write complex numbers in the form  $a + bi$  \_\_\_\_\_/4

2N1c: Add, subtract, multiply and divide complex numbers \_\_\_\_\_/4

2N1d: Simplify expressions involving complex numbers \_\_\_\_\_/4

Write the following expressions in imaginary form: (2N1a)

1.  $\sqrt{-16}$

a.  $-4i$

b.  $4i$

c.  $-16i$

d.  $16i$

2.  $\sqrt{-300}$

a.  $10\sqrt{3}$

b.  $-10\sqrt{3}$

c.  $-10i\sqrt{3}$

d.  $10i\sqrt{3}$

3.  $-3\sqrt{-49}$

a.  $-21i$

b.  $21i$

c.  $-147i$

d.  $147i$

4.  $-2\sqrt{-\frac{12}{3}}$

a.  $-4$

b.  $4$

c.  $-4i$

d.  $4i$

Write the following complex number in standard form: (2N1b)

5.  $5 - \sqrt{-25}$

a.  $5 + 25i$

b.  $5 - 25i$

c.  $5 - 5i$

d.  $5+5i$

6.  $2i(i - 3)$

a.  $-2 - 6i$

b.  $-2 + 6i$

c.  $2 - 6i$

d.  $2 + 6i$

7.  $(3 - 2i) - (5 - 7i)$

a.  $8 - 9i$

b.  $-2 + 5i$

c.  $-2 - 9i$

d.  $8 + 5i$

8.  $\frac{4+3i}{12i}$

a.  $4+\frac{1}{4}i$

b.  $\frac{1}{3}+\frac{1}{4}i$

c.  $\frac{1}{4}-\frac{1}{3}i$

d.  $-\frac{1}{4}+\frac{1}{3}i$

Add, subtract, multiply and divide the following complex numbers (2N1c):

9.  $(-10 + 3i) - (-8 + 2i)$

a.  $-18 + 5i$

b.  $-2 - i$

c.  $-18 - 5i$

d.  $-2 + i$

10.  $(-3 - 4i) + (-5 - 7i)$

a.  $-8 - 11i$

b.  $-8 + 11i$

c.  $2 - 11i$

d.  $2 + 11i$

11.  $(3 + 5i)(2 - i)$

a.  $1 + 7i$

b.  $11 + 7i$

c.  $1 - 7i$

d.  $11 + 13i$

12.  $\frac{(2+5i)}{(3-2i)}$

a.  $-\frac{4}{13}-1\frac{6}{13}i$

b.  $\frac{4}{13}+1\frac{6}{13}i$

c.  $-\frac{4}{13}+1\frac{6}{13}i$

d.  $\frac{4}{13}-1\frac{6}{13}i$

Simplify the following expressions (2N1d):

13.  $(3 + 4i) + 2i(2 - 5i)$

a.  $-7 + 8i$

b.  $-13 + 8i$

c.  $13 + 8i$

d.  $7 + 8i$

14.  $5i^4 + 3i^3 - 4i^2 + 5i - 3$

a.  $6 + 2i$

b.  $6 - 2i$

c.  $-6 + 2i$

d.  $-6 - 2i$

15.  $(3 - 5i)^2$

a.  $34 - 30i$

b.  $34 + 30i$

c.  $-16 - 30i$

d.  $-16 + 30i$

16.  $i^{47}$

a.  $1$

b.  $i$

c.  $-1$

d.  $-i$

## Key

1 b

2 d

3 a

4 c

5 c

6 a

7 b

8 c

9 d

10 a

11 b

12 c

13 c

14 a

15 c

16 d