

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