Worksheet

Complex Numbers Assessment

1. What is a complex number in the form a+ib?

a. Real number
b. Imaginary number
c. Both a and b are real numbers
d. None of the above

2. Which of the following is NOT a real number?

a. -3
b. 5/2
c. √6
d. 4i

3. What happens when you square an imaginary number?

a. It becomes a real number
b. It becomes a fraction
c. It becomes negative
d. It becomes irrational

4. Why were complex numbers introduced to solve $x^2+1=0$?

a. To add complexity
b. To eliminate all solutions
c. To solve when no real roots exist
d. To simplify the equation

5. What is the symbol used to denote the imaginary number √-1?

a. i
b. r
c. n
d. z

6. What does Re z represent in a complex number?

a. The real part
b. The imaginary part
c. The absolute value
d. The complex part

7. If z = 5 + 2i, what is Im z?

a. 5
b. 2
c. 5i
d. 2i

8. Which of the following is a purely real complex number?

a. 3i
b. 0
c. -7i
d. 5

9. Is 0 considered a complex number?

a. Yes
b. No
c. Only in certain cases
d. Not enough information given

10. What does the x-axis represent in the graph of complex numbers?

a. Real part
b. Imaginary part
c. Absolute value
d. Modulus

11. What does the absolute value of a real number represent?

a. The number itself
b. The square root of the number
c. A negative value
d. An irrational number

12. How is the modulus of a complex number calculated?

a. $|z| = x + y$
b. $|z| = \sqrt{(x^2-y^2)}$
c. $|z| = x^2 + y^2$
d. $|z| = \sqrt{(x^2+y^2)}$

13. Which algebraic operation is NOT performed on complex numbers?

a. Multiplication
b. Division
c. Exponentiation
d. Addition

14. How are similar terms combined in complex number addition?

a. Combine real with imaginary parts
b. Combine the magnitudes

c. Combine real with real and imaginary with imaginary
d. Do not combine them

15. In the division of two complex numbers, what is the numerator multiplied by?

a. The real part of the denominator
b. The imaginary part of the denominator
c. The conjugate value of the denominator
d. The modulus of the denominator

Answer Key (Always review AI generated answers for accuracy - Math is more likely to be inaccurate)

1. c
2. d
3. c
4. c
5. a
6. a
7. b
8. b
9. a
10. a
11. a
12. d
13. c
14. c
15. c