Name _____

Inverse Property of Operations: Exponents & Roots

Part A: Match the Inverses

Draw a line or write the matching pair of inverse operations.

1. Square a number (x^2)
2. Cube a number (x^3)
3. Take the square root ($\sqrt{x}$)
4. Take the cube root ($\sqrt[3]{x}$)

Match with:

a. Cube a number
b. Take the cube root
c. Take the square root
d. Square a number

Part B: Apply the Inverse to Simplify - Simplify each using inverse operations.

5. $\sqrt{49}$
6. $\sqrt[3]{27}$
7. $(\sqrt{9})^2$
8. $(\sqrt[3]{8})^3$
9. $(5)^2$then take the square root
10. $(\sqrt{36})^3$

Part C: Solve Using Inverses - Use the inverse operation to find the value of x.

11. $x^2 = 64$
12. $x^3 = 27$
13. $\sqrt{x} = 7$
14. $\sqrt[3]{x} = 4$
15. $x^2 = 100$

Part D: Word Problems

Translate and solve using the inverse relationship between powers and roots.

16. The square of a number is 49. What is the number?
17. The cube of a number is 125. What is the number?
18. The square root of a number is 9. What is the number?
19. The cube root of a number is 3. What is the number?
20. A number squared equals 36. Find the number.