Cube & Square Roots Worksheet

What Is a Square Root?

A **square root** of a number is a value that, when **multiplied by itself**, equals the original number. **In other words:**
If a×a=ba \times a = ba×a=b, then aaa is the square root of bbb.
Tip for Finding Square Roots - - Ask yourself:
"What number multiplied by itself equals the number inside the square root?"
Example 1
What is √25? → Think:

- **1 × 1 = 1**
- **2 × 2 = 4**
- **3 × 3 = 9**
- **4 × 4 = 16**
- **5 × 5 = 25 ✓**

Therefore: √25 = 5

What Is a Cube Root?

A **cube root** of a number is a value that, when multiplied by itself **three times**, equals the original number. In other words:
If a×a×a=ba \times a \times a = ba×a×a=b, then aaa is the cube root of bbb.
Example 1
What is $\sqrt[3]{27}$? → Think:

- **3 × 3 × 3 = 27 ✓**

Therefore: $\sqrt[3]{27} = 3$

Directions: Find the square root or cube root of each number. Show your work when needed.

Part A: Square Roots: Find each square root.

1. √25 = _____
2. √64 = _____
3. √81 = _____
4. √100 = _____
5. √121 = _____
6. √144 = _____
7. √169 = _____
8. √196 = _____
9. √225 = _____
10. √400 = _____

Part B: Cube Roots - Find each cube root.

11. $\sqrt[3]{8}$ = _____
12. $\sqrt[3]{27}$ = _____
13. $\sqrt[3]{64}$ = _____
14. $\sqrt[3]{125}$ = _____
15. $\sqrt[3]{216}$ = _____
16. $\sqrt[3]{343}$ = _____
17. $\sqrt[3]{512}$ = _____
18. $\sqrt[3]{729}$ = _____
19. $\sqrt[3]{1000}$ = _____
20. $\sqrt[3]{1728}$ = _____

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Part C: Mixed Practice - Find each answer.

21. $\sqrt{49}$ = _____

22. $\sqrt[3]{1}$ = _____

23. $\sqrt{289}$ = _____

24. $\sqrt[3]{1331}$ = _____

25. $\sqrt{324}$ = _____

26. $\sqrt[3]{2197}$ = _____

27. $\sqrt{361}$ = _____

28. $\sqrt[3]{2744}$ = _____

29. $\sqrt{441}$ = _____

30. $\sqrt[3]{3375}$ = _____

Part D: Determine the Missing Number

31. ___^{2} = 36

32. ___^{2} = 196

33. ___^{2} = 256

34. ___^{3} = 64

35. ___^{3} = 125

36. ___^{3} = 512

37. ___^{2} = 529

38. ___^{3} = 729

39. ___^{2} = 625

40. ___^{3} = 1000

Part E: Word Problems

41. The area of a square garden is 144 square feet. What is the length of one side?

    Answer: _____ feet

42. A cube-shaped box has a volume of 216 cubic inches. What is the length of one edge?

    Answer: _____ inches

43. A square floor has an area of 400 square feet. What is the length of one side?

    Answer: _____ feet

44. A cube has a volume of 729 cubic centimeters. What is the length of one edge?

    Answer: _____ centimeters

45. A square playground covers 625 square yards. How long is each side?

    Answer: _____ yards

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