Math Worksheet for 8th Grade

Square roots & cube roots

Name: Due Date: Teacher: Parent Sign:

1. What is $\sqrt{81}$?
2. What is $\sqrt{144}$?
3. What is $\sqrt{169}$?
4. If the area of a square garden is 196 m^2, what is the length of one side?
5. Find the positive solution to $x^2 = 225$.
6. What is $\sqrt{0.81}$?
7. What is $\sqrt{2.25}$?
8. What is $\sqrt{0.0004}$?
9. If the area of a square tile is 0.49 m^2, what is the length of one side in meters?
10. A square picture frame has side length 12 cm. What is its area?
11. What is $\sqrt{27}$?
12. What is $\sqrt{64}$?
13. What is $\sqrt{125}$?
14. Find the number y such that $y^3 = 216$.
15. If a cube has a side length of 5 cm, what is its volume?
16. What is $\sqrt{1}$?
17. What is $\sqrt{8}$?
18. Given $(-3)^3 = -27$, what is $\sqrt{(-27)}$?
19. What is $\sqrt{(-8)}$?
20. What is $\sqrt{(-64)}$?
21. If a cube-shaped box has volume 343 cm^3, what is the length of one edge?
22. A cube has volume 1000 cm^3. What is its edge length?
23. The volume of a small wooden cube is 0.008 m^3. What is the edge length in meters?
24. A large ice cube tray makes cubes each with volume 512 cm^3. Find the side length of each cube.
25. Evaluate $\sqrt{(49)} + \sqrt{(27)}$.
26. Evaluate $\sqrt{(36)} \times \sqrt{(125)}$.
27. If $x^2 = 81$, find all possible values of x.
28. If a square floor has side length 3.5 m, what is its area?
29. What is $\sqrt{12.25}$?
30. The area of a square painting is 2.25 m^2. Find the side length.
31. A cube has edge length 0.2 m. What is its volume in cubic meters?

32. The volume of a cube-shaped fish tank is 64 L. (1 L = 1,000 cm^3) If that volume is meant in cubic centimeters, what is the edge length in cm? [Assume the given 64 is in cm^3 for simplicity — find the cube root of 64.]

33. Find $\sqrt[3]{343} - \sqrt{81}$.

34. A small chocolate cube has side 1.2 cm. What is its volume?

35. If $n^3 = -125$, what is n?

36. If the area of a square puddle is 0.36 m^2, what is the depth (in m) of water if the side equals the square root of area and depth is half that side? (First find the side, then half of it.)

37. Find $\sqrt{0.09} + \sqrt[3]{0.001}$.

38. A cube-shaped gift box has volume 729 cm^3. What is the edge length?

39. A cube has volume 27,000 cm^3. What is the edge length in cm? (Hint: $27{,}000 = 27 \times 1000$)

40. If a square has perimeter 48 m, what is its area?

41. Evaluate $\sqrt[3]{512} \div \sqrt{64}$.

42. The area of a square playground is 144 m^2. A fence will be built around it. What is the side length of the playground and the total length of the fence?

43. A cube's edge measures 4.5 cm. What is its volume (give answer in cubic cm)?

44. Find the cube root of 0.027.

45. A cubic container holds 0.001 cubic meters of liquid. What is the side length of the container in meters?

46. If $x^3 = 343$, find x.

47. A square photo has diagonal length $d = 10\sqrt{2}$ cm. What is the side length of the photo? (Hint: For a square, diagonal = side $\times \sqrt{2}$.)

48. Evaluate $\sqrt{0.64} \times \sqrt[3]{64}$.

49. The volume of a cube is 18,520 cm^3. Is the edge length an integer? (Justify by checking nearby integer cubes.)

50. A cube-shaped ice block melts and its volume becomes 216 cm^3. What is the length of one side of the remaining cube?