Practice Questions On Square Root Questions

Name: _____ Date: _____

Square Root Questions And Answers

Question 14: If √(x + 12) = 8, find √x.

Step 1: Square both sides

x + 12 = 64

x = 52

Step 2: Find √x

√52 = √(4 × 13) = 2√13

Answer: √x = 2√13

Question 15: The area of a square is 4 times the area of another square with side 7 cm. Find the side of the larger square.

Area of smaller square = 7^2 = 49 cm^2

Area of larger square = 4 × 49 = 196 cm^2

Side of larger square = √196 = 14 cm

Answer: 14 cm

Question 16: I am a number. My square root is a two-digit number. The sum of digits of my square root is 9. My value is less than 400. What number am I?

Two-digit square roots with digit sum 9:

18 (1+8=9), 27 (2+7=9), 36 (3+6=9), 45 (4+5=9)...

Their squares:

$18^2 = 324$ (less than 400) ✓

$27^2 = 729$ (more than 400) ✗

Answer: I am 324

($\sqrt{324} = 18$, 1+8=9, 324 < 400)

Question 17: Simplify: $\sqrt{48} + \sqrt{75} - \sqrt{27}$

$\sqrt{48} = \sqrt{(16 \times 3)} = 4\sqrt{3}$

$\sqrt{75} = \sqrt{(25 \times 3)} = 5\sqrt{3}$

$\sqrt{27} = \sqrt{(9 \times 3)} = 3\sqrt{3}$

$= 4\sqrt{3} + 5\sqrt{3} - 3\sqrt{3}$

$= (4 + 5 - 3)\sqrt{3}$

$= 6\sqrt{3}$

Answer: $6\sqrt{3}$

Practice Test on Square Root Questions

1. $\sqrt{100} = ?$

   Answer: 10

2. $\sqrt{\_\_\_} = 8$

Answer: 64

3. √196 = ?

Answer: 14

4. A square has area 81 cm². Find the side.

Answer: 9 cm

5. √(49 × 4) = ?

Answer: √49 × √4 = 7 × 2 = 14

6. Find √2025 using prime factorisation.

2025 = $5^2 \times 3^4 = 5^2 \times (3^2)^2$

√2025 = 5 × 9 = 45

7. Simplify: √98

√98 = √(49×2) = 7√2

8. If √y = 0.3, find y.

$y = 0.3^2 = 0.09$

9. A square room has perimeter 88 m. Find area.

Side = 88/4 = 22 m

Area = 22^2 = 484 m²

10. Simplify: 2√18 + 3√8

2√18 = 2×3√2 = 6√2

3√8 = 3×2√2 = 6√2

Total = 12√2

11. Find √(248 + √(51 + √25))

Innermost: √25 = 5

Next: √(51+5) = √56 = 2√14 ≈ 7.48

Outer: √(248+7.48) = √255.48 ≈ 15.98

12. If area of square = 2809 cm², find perimeter.

Side = √2809 = 53 cm

(Check: 50² = 2500, 53² = 2809)

Perimeter = 4 × 53 = 212 cm

13. Simplify: √75 − 2√12 + √27

= 5√3 − 4√3 + 3√3 = 4√3

14. √(0.000081) = ?

= √(81/1000000)

= 9/1000

= 0.009

15. Find x: $x^2 - 5x + \sqrt{(x^2 - 5x - 24)} = 0$

Let $\sqrt{(x^2-5x-24)} = k$

Then $x^2-5x = k$

$k + k^2 - 24 = 0$... actually

Simpler: Let $u = x^2-5x$

$u + \sqrt{(u-24)} = 0$

$\sqrt{(u-24)} = -u$

$u-24 = u^2$

$u^2 - u + 24 = 0$