Radical equations and formulas worksheet – Grade 9

Grade 9 · Mixed level · 20 questions · **Version X1565**

Name: _____ Date: _____ Score: ___ / 20

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1. Find x if $\sqrt{x} + 12 = 20$.

   Answer: _____

2. A square has an area of A and a side of 7 m, where $s = \sqrt{A}$. What is A, in m²?

   Answer: _____

3. Solve: $\sqrt{x + 14} = 11$

   Answer: _____

4. What value of x makes $\sqrt{x} - 14 = 10$ true?

   Answer: _____

5. Solve for x: $\sqrt{x + 2} = 7$

   Answer: _____

6. Solve for x: $\sqrt{x + 13} = 9$

   Answer: _____

7. Find x if $\sqrt{x} + 14 = 21$.

   Answer: _____

8. The legs of a right triangle are 8 and x, and the hypotenuse is $\sqrt{208}$. Find x.

   Answer: _____

9. Solve for x: $\sqrt{70 - 2x} = 6$

   Answer: _____

10. An object falls d metres in t seconds, where $t = \sqrt{d \div 4.9}$. How far has it fallen after 1 s, in metres?

    Answer: _____ m

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11. Solve: $6\sqrt{x} + 1 = 61$

    Answer: _____

12. Solve for x: $6\sqrt{x} + 1 = 67$

    Answer: _____

13. An object falls d metres in t seconds, where $t = \sqrt{d \div 4.9}$. How far has it fallen after 2 s, in metres?

    Answer: _____ m

14. Solve: $\sqrt{100 - 2x} = 8$

    Answer: _____

15. A swing takes about $T = 2\sqrt{L}$ seconds for one full swing, with L in metres. How long is a swing that takes 6 s, in metres?

    Answer: _____ m

16. Police estimate a car's speed from skid marks with $v = 10\sqrt{d}$, where v is in km/h and d in metres. A car was going 30 km/h. How long are the marks, in metres?

    Answer: _____ m

17. Does $\sqrt{x + 10} = -2$ have a solution?

    A. No, a square root cannot be negative **B.** Yes, x = -6 **C.** Yes, x = 4 **D.** Yes, x = 0

18. Solving $\sqrt{x + 2} = x$ gives x = 2 or x = -1. Which is a true solution?

    A. 2 only **B.** -1 only **C.** Both **D.** Neither

19. Solve for x: $\sqrt{8x + 10} = \sqrt{4x + 30}$

    Answer: _____

20. Solve: $3\sqrt{x} = \sqrt{x + 40}$

    Answer: _____

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Answer key · Version X1565

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1. **64**
2. **49**
3. **107**
4. **576**
5. **47**
6. **68**
7. **49**
8. **12**
9. **17**
10. **4.9**
11. **100**
12. **121**
13. **19.6**
14. **18**
15. **9**
16. **9**
17. **A (No, a square root cannot be negative)**
18. **A (2 only)**
19. **5**
20. **5**

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