

NAME: _____

P.I. A2.A.22: Solve radical equations

1. Which of the following has no *real* solution?

[A] $\sqrt{x} + 3 = 4$ [B] $2\sqrt{x} - 3 = 1$
[C] $\sqrt{x} + 2 = 1$ [D] $3\sqrt{x} - 3 = -1$
[E] $\sqrt{x} - 3 = -1$

2. Which solution is an extraneous solution for the equation $-x = \sqrt{x+6}$?

[A] -2 [B] 3 [C] 2
[D] 6 [E] -6

3. Tell which solution(s), if any, are extraneous for the given equation.

$$-2x = \sqrt{17-16x} - 1; x = -4, x = 1$$

5. $\sqrt{x+30} = x$

[A] $6, -5$ [B] -5
[C] no solution [D] 6

6. $\sqrt{x+20} = x$

7. $\sqrt{x+4} = -3$

[A] $5, -13$ [B] 5
[C] -13 [D] no real number solutions

8. $\sqrt{6x-5} = \sqrt{5x+4}$

[A] 9 [B] 8 [C] 1 [D] no solution

Solve:

4. $\sqrt{x+8} + 3 = 2$

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Solve:

9. $\sqrt{x+14} = x-16$

[A] 11

[B] 22, 11

[C] 22

[D] no real number solution

10. $\sqrt{2x-2} - \sqrt{4} = 2$

11. $\sqrt{x+2} = x$

12. $\sqrt{3x-2} - \sqrt{9} = 2$

13. $\sqrt{x-8} - x = -8$

14. $\sqrt{5x+1} = \sqrt{4x+5}$

[A] 4

[B] no solution

[C] 3

[D] 6

15. $\sqrt{x+4} + 8 = 7$

16. $\sqrt{x+12} = x$

17. $\sqrt{x-9} - x = -9$

18. $\sqrt{x+23} = x+11$

[A] -14, -7

[B] -7

[C] -14

[D] no real number solution

- [1] C
- [2] B
- [3] 1
- [4] no solution
- [5] D
- [6] 5
- [7] D
- [8] A
- [9] C
- [10] 9
- [11] 2
- [12] 9
- [13] 8, 9
- [14] A
- [15] no solution
- [16] 4
- [17] 9, 10
- [18] B