

EXTRA PRACTICE — Exercises

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Unit VII – Relations of Rational Number Degree

Part C – Solving Radical Equations

Lesson 2 – Equations with Two Radicals or More

Solve each of the following equations by isolating each radical, one at a time, and applying the principle of powers. Be sure to check your apparent solutions for extraneous roots and then show the solution set.

1. $2\sqrt{x+1} = \sqrt{x-2} + \sqrt{x+6}$

2. $\sqrt{6n-2} = \sqrt{4n+4}$

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

4. $\frac{1}{1-\sqrt{x}} = 1 - \frac{\sqrt{x}}{\sqrt{x}-1}$

5. $\sqrt{2x} - \sqrt{x-3} = \frac{2}{\sqrt{x-3}}$

6. $\sqrt{t-8} = \sqrt{t} - 4$

7. $\sqrt{6x} - 1 = \sqrt{4x+5}$

8. $\sqrt{x-3} = \sqrt{2} - \sqrt{x}$

9. $\sqrt{x+10} + \sqrt{2x+4} - 8 = 0$

10. $\frac{2x-3}{\sqrt{2x-2}} = 1 + \sqrt{2x}$

EXTRA PRACTICE — Answer Key

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Solve each of the following equations by isolating each radical, one at a time, and applying the principle of powers. Be sure to check your apparent solutions for extraneous roots and then show the solution set.

1. $S = \{3\}$

2. $S = \{3\}$

3. $S = \{0\}$

4. x can be any non - negative real number

5. $S = \{2 + \sqrt{5}, 2 - \sqrt{5}\}$

6. $S = \{\text{no solution}\}$

7. $S = \{5 + \sqrt{21}, 5 - \sqrt{21}\}$

8. $S = \{\text{no solution}\}$

9. $S = \{6\}$

10. $S = \left\{\frac{1}{2}\right\}$