SECONDARY MATH 3

**CORE STANDARDS**

A.REI.2

LESSON

**3-1**

OBJECTIVE **1.** I can solve radical equations.

NOTES A **radical equation** is an equation that has a variable in a radicand or a variable with a rational exponent.

The **radicand** is the expression under the radical symbol.

The **index** is the small number outside of the radical sign.

To solve a radical equation: 1) Isolate the radical on one side of the equation.

2) Raise each side to the power of the index.

3) Simplify.

4) Check solutions in original equation to eliminate extraneous solutions.

EXAMPLES

1. Solve: $4+\sqrt{3x+10}=9$
2. Solve: $-1+\sqrt[3]{2x-5}=2$
3. Solve: $\sqrt{x+9}-7=x$
4. Solve: $\sqrt{3x+1}-\sqrt{x+1}=2$

PRACTICE **3-1** NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 [SHOW YOUR WORK]

Solve each rational equation.

1. $\sqrt{x-2}+5=8$
2. $2\sqrt{x+4}-5=-3$
3. $\sqrt{2x-1}-3=2$
4. $3\sqrt{x}-4=11$
5. $\sqrt[4]{2x+3}-2=1$
6. $\sqrt{3x+4}+6=13$
7. $\sqrt{x+3}-2=4$
8. $-\sqrt{x-4}+3=-1$
9. $\sqrt{x-2}+4=2$
10. $\sqrt[3]{3x+4}+1=2$
11. $2\sqrt[3]{x}+6=-4$
12. $3\sqrt[5]{x+6}-7=-4$
13. $\sqrt{x+7}=x-5$
14. $\sqrt{2x-1}=x-2$
15. $\sqrt{4x-3}=2+\sqrt{2x-5}$
16. $\sqrt{3-x}+\sqrt{x+2}=3$