**5.3: Radical Equations (Day 1)**

**Objectives:**

* Solving equations involving square roots
* Determining the roots of a radical equation algebraically
* Identifying restrictions on the values for the variable in a radical equation

Today’s lesson is about solving radical equations. Radical Equations are equations with radical signs in them. Solving a radical equation is similar to solving a linear or quadratic equation, we are trying to **isolate the variable** and determine possible values for the unknown.



**Example 1)** **a)** State the ***restrictions*** on ***x***in  if the radical is a real number.



**b)** Solve 



**Your Turn**



Identify any restrictions on *y* in  if the radical is a real number. Then, solve the equation.



**Example 2)** Identify the restrictions on *n* in  if the radical is a real number. Then, solve the equation.



**Your Turn**



Identify any restrictions on ***m***in if the radical is a real number. Then, solve the equation. Check your solution(s).



**To solve radical equations:**

1. State any **restrictions** on the variables.
2. Isolate the radical. Square both sides.
3. Solve the remaining quadratic equation.
4. Check your solution(s). Reject any **extraneous roots**.

Recall that **extraneous roots** are solutions that do not satisfy any initial conditions.

**Example 3**) Solve , ***x* ≥ 0.** Check your solution.

