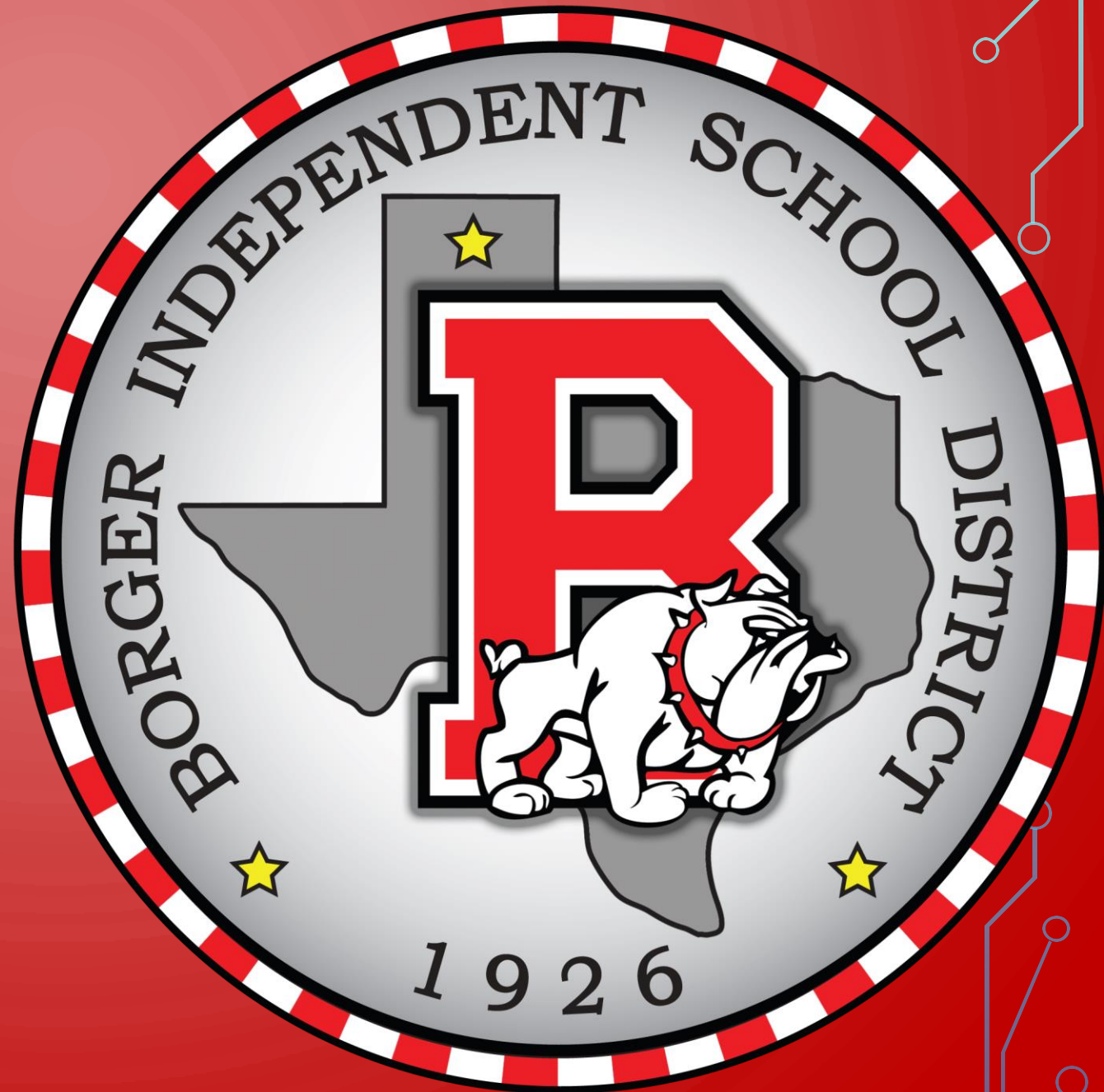
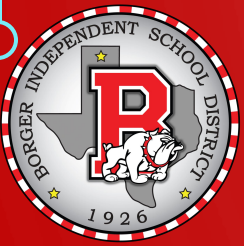


# BOARD NOTES

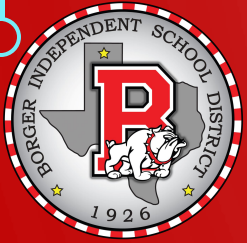
5 FEBRUARY 2020





- 2A.4 (F) solve quadratic and square root equations;
- 2A.4 (G) identify extraneous solutions of square root equations;
- 2A.7 (G) rewrite radical expressions that contain variables to equivalent forms;
- 2A.7 (H) solve equations involving rational exponents;

We will be able to solve equations involving rational exponents identifying extraneous solutions.



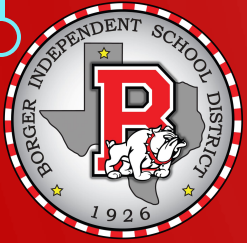
WHAT WE NEED:

- TI-84

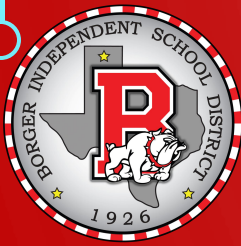
I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Equation

# Solving Radical Equations (More Than One Radical)



1. Isolate one radical
2. Raise both sides by the reciprocal power
3. Repeat steps 1-2 until there are no radicals
4. Solve for  $x$
5. Check possible solutions
6. Circle or box in solution



$$(\sqrt{3x+1})^2 = (\sqrt{x+15})^2$$

$$3x+1 = x+15$$

$$2x = 14$$

$$\boxed{x = 7}$$

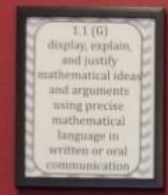
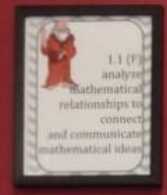
$$\begin{aligned} \text{LHS} &= \sqrt{7 \cdot 3 + 1} \\ &= \sqrt{22} \end{aligned}$$

$$\begin{aligned} \text{RHS} &= \sqrt{7+15} \\ &= \sqrt{22} \end{aligned}$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)(a+b) = a^2 - b^2$$



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

$$(-\sqrt{x+3})^2 = (1 + \sqrt{x-2})^2$$

$$\begin{matrix} x+3 & = & x-1+2\sqrt{x-2} \\ -x+1 & -x+1 & \end{matrix}$$

$$\frac{4}{2} = \frac{2\sqrt{x-2}}{2}$$

$$(2)^2 = (\sqrt{x-2})^2$$

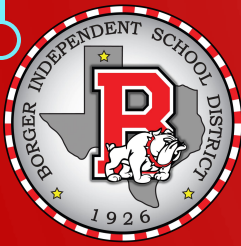
$$\# \sqrt{\quad} \#$$

$$\begin{aligned} a &= 1 \\ b &= \sqrt{x-2} \\ a^2 &= 1 \\ 2ab &= 2\sqrt{x-2} \\ b^2 &= x-2 \end{aligned}$$

$$4 = x-2$$

$$\boxed{x=6}$$

$$\begin{aligned} \text{LHS} &= \sqrt{6+3} - \sqrt{6-2} \\ &= \sqrt{9} - \sqrt{4} \\ &= 3 - 2 \\ &= 1 \\ &= \text{RHS} \end{aligned}$$



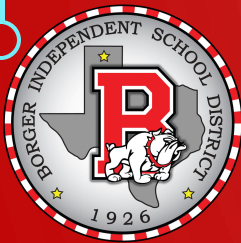
♡-----♡  
8  
(school)  
days until  
Valentine's  
Day ♡-----♡

$$\begin{aligned}\sqrt{3x+4} &= \sqrt{x+1} + 1 \\ (\sqrt{3x+4})^2 &= (\sqrt{x+1} + 1)^2 \\ 3x+4 &= x+1+1+2\sqrt{x+1} \\ 2x+2 &= 2\sqrt{x+1} \\ x+1 &= \sqrt{x+1}\end{aligned}$$

$$\begin{aligned}(x+1)^2 &= (\sqrt{x+1})^2 \\ x^2+2x+1 &= x+1 \\ x^2+x &= 0 \\ x(x+1) &= 0 \\ \Rightarrow \boxed{x=0} &\text{ OR } x+1=0 \\ &\quad \boxed{x=-1}\end{aligned}$$

$$\begin{aligned}\text{LHS} &= \sqrt{3 \cdot 0 + 4} \\ &= \sqrt{4} \\ &= 2 \\ \text{RHS} &= \sqrt{0+1} + 1 \\ &= \sqrt{1} + 1 \\ &= 2\end{aligned}$$

$$\begin{aligned}\text{LHS} &= \sqrt{3(-1)+4} \\ &= \sqrt{1} \\ &= 1 \\ \text{RHS} &= \sqrt{-1+1} + 1 \\ &= 0 + 1 \\ &= 1\end{aligned}$$



$$\sqrt{3(-1)+4}$$
$$\sqrt{1}$$
$$1$$

$$\sqrt{-1+1}+1$$
$$= 0+1$$
$$= 1$$

$$(\sqrt{3-x+1})^2 = (\sqrt{3x-5})^2$$
$$((3(x+1))^{\frac{1}{2}})^{\frac{1}{2}} = 3x-5$$

$$3\sqrt{x+1} = 3x-5$$

$$(\sqrt{x+1})^2 = (x - \frac{5}{3})^2$$

$$x+1 = x^2 - \frac{10}{3}x + \frac{25}{9}$$

$$\frac{3x}{3} \quad \frac{9}{9}$$

$$9(x^2 - \frac{13}{3}x + \frac{16}{9}) = 0$$

$$9x^2 - 39x + 16 = 0$$

$$a=9$$

$$b=-39$$

$$c=16$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

30.74

$$= \frac{-(-39) \pm \sqrt{(-39)^2 - 4(9)(16)}}{2(9)}$$

$$= \frac{39 \pm \sqrt{1521 - 576}}{18}$$

$$= \frac{39 \pm \sqrt{945}}{18}$$

$$= \frac{39 + \sqrt{9 \cdot 105}}{18}$$