BOARD NOTES
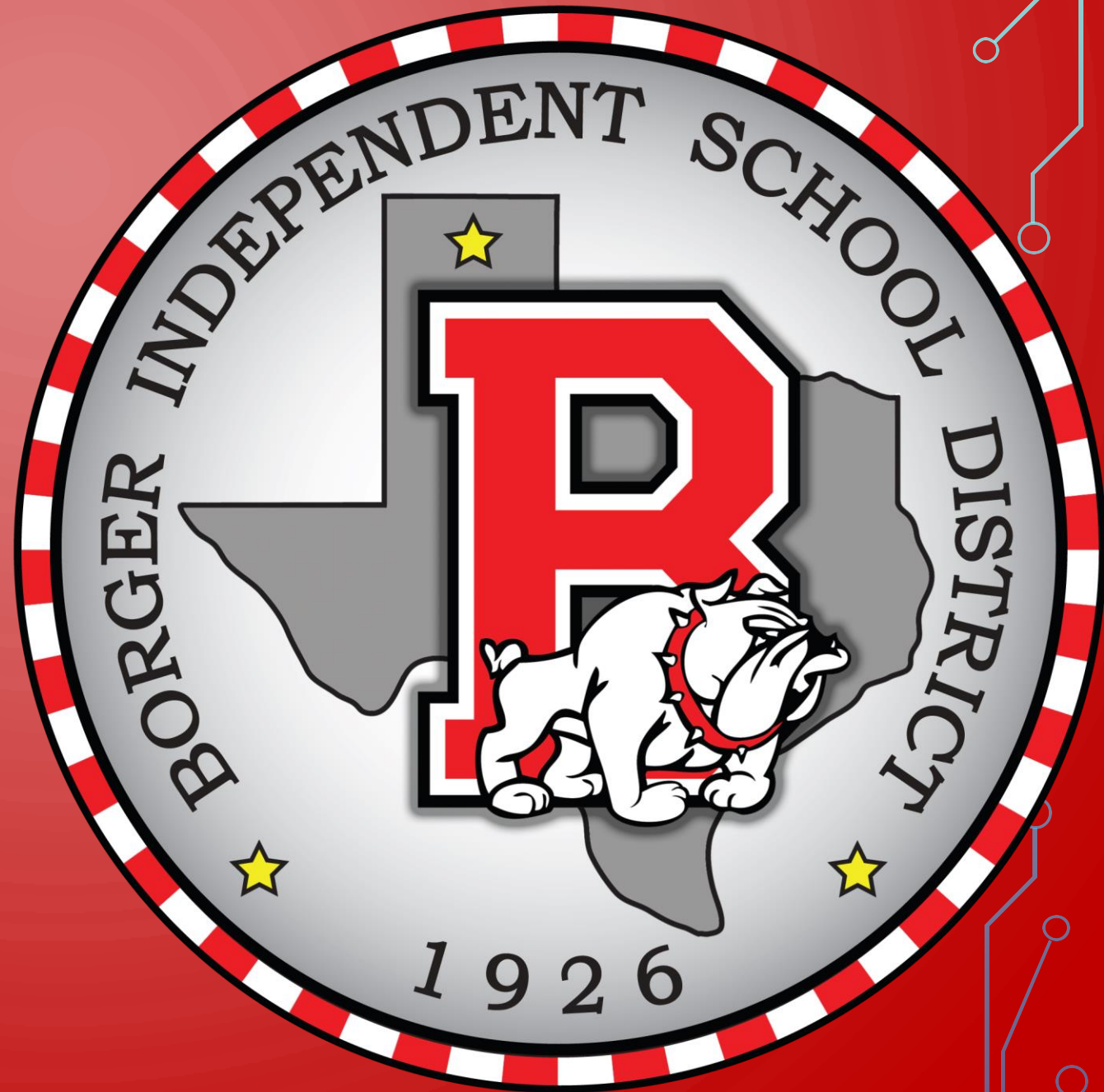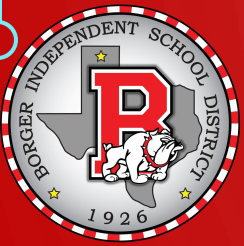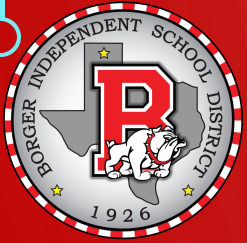
4 FEBRUARY 2020

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.
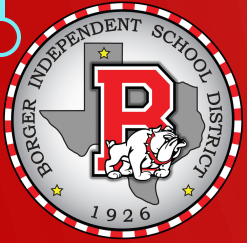
WHAT WE NEED:

- TI-84

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Equation

Solving Radical Equations (One Radical)

1. Isolate the radical
2. Raise both sides by the reciprocal power
3. Solve for x
4. Check possible solutions
5. Circle or box in solution

$$\left(3 + 4\sqrt{5x-6}\right)^2 = \boxed{80x + 24\sqrt{5x-6} - 87}$$

$a = 3$

$b = 4\sqrt{5x-6}$

$a^2 = 3^2 = \boxed{9}$

$b^2 = \left(4\sqrt{5x-6}\right)^2 = 4^2\left(\sqrt{5x-6}\right)^2$

$= 16(5x-6) = \boxed{80x - 96}$

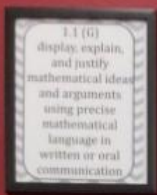$2ab = \boxed{24\sqrt{5x-6}}$

$$\sqrt[4]{x+2} + 9 = 14$$

$$\left(\sqrt[4]{x+2}\right)^4 = (5)^4$$

$$x + 2 = 625$$

$$\boxed{x = 623}$$

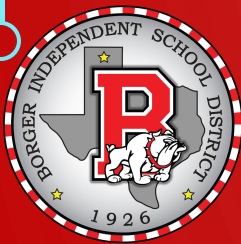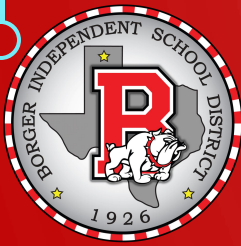$LHS = \sqrt[4]{623+2} + 9 = \sqrt[4]{625} + 9 = 5 + 9 = 14 = RHS$

$\left(\sqrt{7x-18}\right)^2 = (5)^2$

$7x - 18 = 25$

$7x = 43$

$\boxed{x = \dfrac{43}{7}}$

LHS $= \sqrt{7 \cdot \frac{43}{7} - 18}$

$= \sqrt{43 - 18}$

$= \sqrt{25}$

$= 5$

$= $ RHS

$8\sqrt[3]{x} - 24 = 0$

$\dfrac{8\sqrt[3]{x}}{8} = \dfrac{24}{8}$

$\left(\sqrt[3]{x}\right)^3 = (3)^3$

$\boxed{x = 27}$

LHS $= 8\sqrt[3]{27} - 24$

$= 8 \cdot 3 - 24$

$= 0$

$= $ RHS

9

days until
Valentine's
Day

$5 + \sqrt{x+7} = x$

$\left(\sqrt{x+7}\right)^2 = (x-5)^2$

$x + 7 = x^2 - 10x + 25$

$0 = x^2 - 11x + 18$

$= (x-9)(x-2)$

$x - 9 = 0 \quad \text{OR} \quad x - 2 = 0$

$\boxed{x = 9} \qquad \cancel{x = 2}$

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

$AB = 0$

$A \text{ is } 0 \text{ or } B = 0$

$LHS = 5 + \sqrt{2+7}$
$= 5 + \sqrt{9}$
$= 5 + 3$
$= 8$
$\neq 2 = RHS$

$LHS = 5 + \sqrt{9+7}$
$= 5 + \sqrt{16}$
$= 5 + 4$
$= 9 = RHS$

til
re's
y --- ♡

√2+7
√9
3

= RHS

$$\text{LHS} = 5 + \sqrt{9+7}$$
$$= 5 + \sqrt{16}$$
$$= 5 + 4$$
$$= 9 = \text{RHS}$$

$$\frac{10\sqrt{9x}}{10} = \frac{60}{10}$$
$$\left(\sqrt{9x}\right)^2 = (6)^2$$
$$9x = 36$$
$$x = 4$$
$$\text{LHS} = 10\sqrt{9 \cdot 4}$$
$$= 10\sqrt{36}$$
$$= 10 \cdot 6$$
$$= 60 = \text{RHS}$$