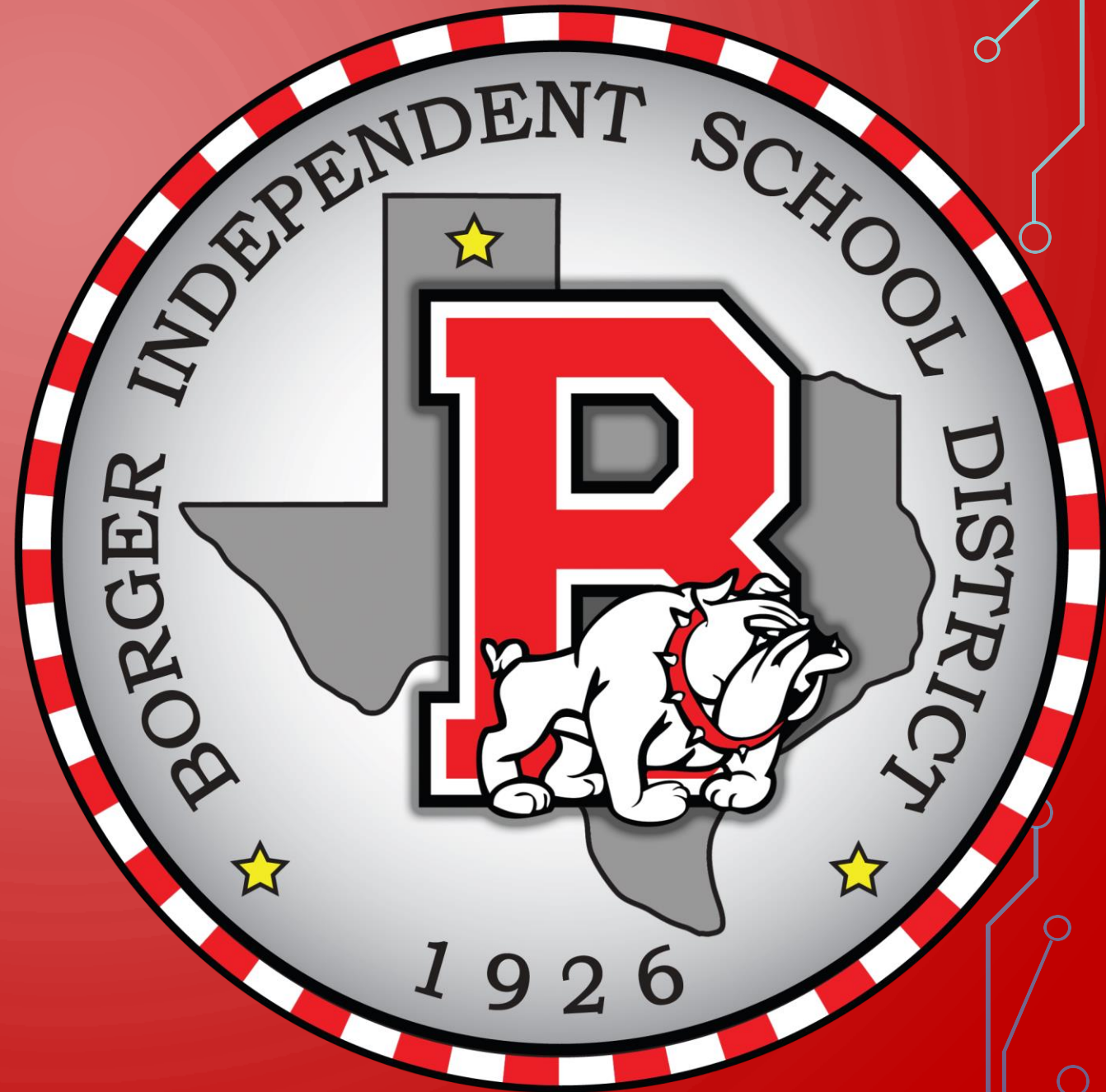


# BOARD NOTES

10 MARCH 2020



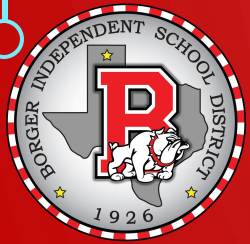
P.5 (A) evaluate finite sums and geometric series, when possible, written in sigma notation;

P.5 (B) represent arithmetic sequences and geometric sequences using recursive formulas;

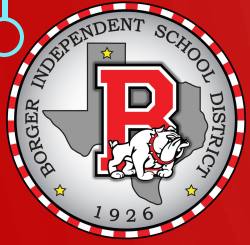
P.5 (C) calculate the  $n$ th term and the  $n$ th partial sum of an arithmetic series in mathematical and real-world problems;

P.5 (D) represent arithmetic series and geometric series using sigma notation;

P.5 (E) calculate the  $n$ th term of a geometric series, the  $n$ th partial sum of a geometric series, and sum of an infinite geometric series when it exists;



We will be able to write the formula for a given arithmetic or geometric sequence.



WHAT WE NEED:

- TI-84
- Arithmetic Sequence
- Geometric Sequence

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Equation



Arithmetic:

$$d = a_2 - a_1$$

$$d = a_3 - a_2$$

Geometric:

$$r = \frac{a_2}{a_1}$$

$$r = \frac{a_3}{a_2}$$



ARITH

2, -3, -8, -13, -18, -23, -28

$$-3 - 2 = -5d$$

$$a_{23} = -108$$

$$* a_n = a_1 + d(n-1)$$

$$a_n = 2 + (-5)(n-1)$$

$$= 2 - 5n + 5$$

$$= -5n + 7$$

10, 4, -2, -8

$$1) d = 4 - 10$$

$$= -6$$

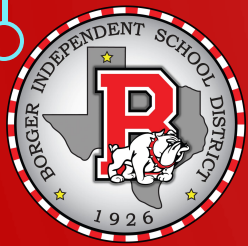
$$2) a_n = 10 - 6(n-1)$$

$$= 10 - 6n + 6$$

$$= -6n + 16$$

$$3) a_{36} = -200$$





$$a_4 = 20 \quad a_{13} = 65$$

$$a_{20} = 100$$

$$a_1 = ?$$

$$d = ?$$

$$\begin{array}{c} a_1 \quad d \quad c \\ \left[ \begin{array}{cc|c} 1 & 3 & 20 \\ 1 & 12 & 65 \end{array} \right] \end{array}$$

$$\Rightarrow a_1 = 5$$

$$d = 5$$

$$a_n = 5 + 5(n-1) \\ = 5n$$

$$20 = a_1 + d(4-1) \rightarrow 20 = a_1 + 3d$$

$$65 = a_1 + d(13-1) \rightarrow 65 = a_1 + 12d$$

$$9, a_2, a_3, a_4, 29$$

$$29 = 9 + d(5-1)$$

$$20 = 4d$$

$$a_2 = 14$$

$$d = 5$$

$$a_3 = 19$$

$$a_4 = 24$$



3, 6, 12 ...

$$1) r = \frac{a_2}{a_1} = \frac{6}{3} = 2$$

$$2) a_n = a_1(r)^{n-1} \\ = 3(2)^{n-1}$$







$$n = 1 \quad 2 \quad 3 \quad 4 \quad 5$$
$$1, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \frac{1}{25}, \frac{1}{36}, \frac{1}{49}, \frac{1}{64}$$