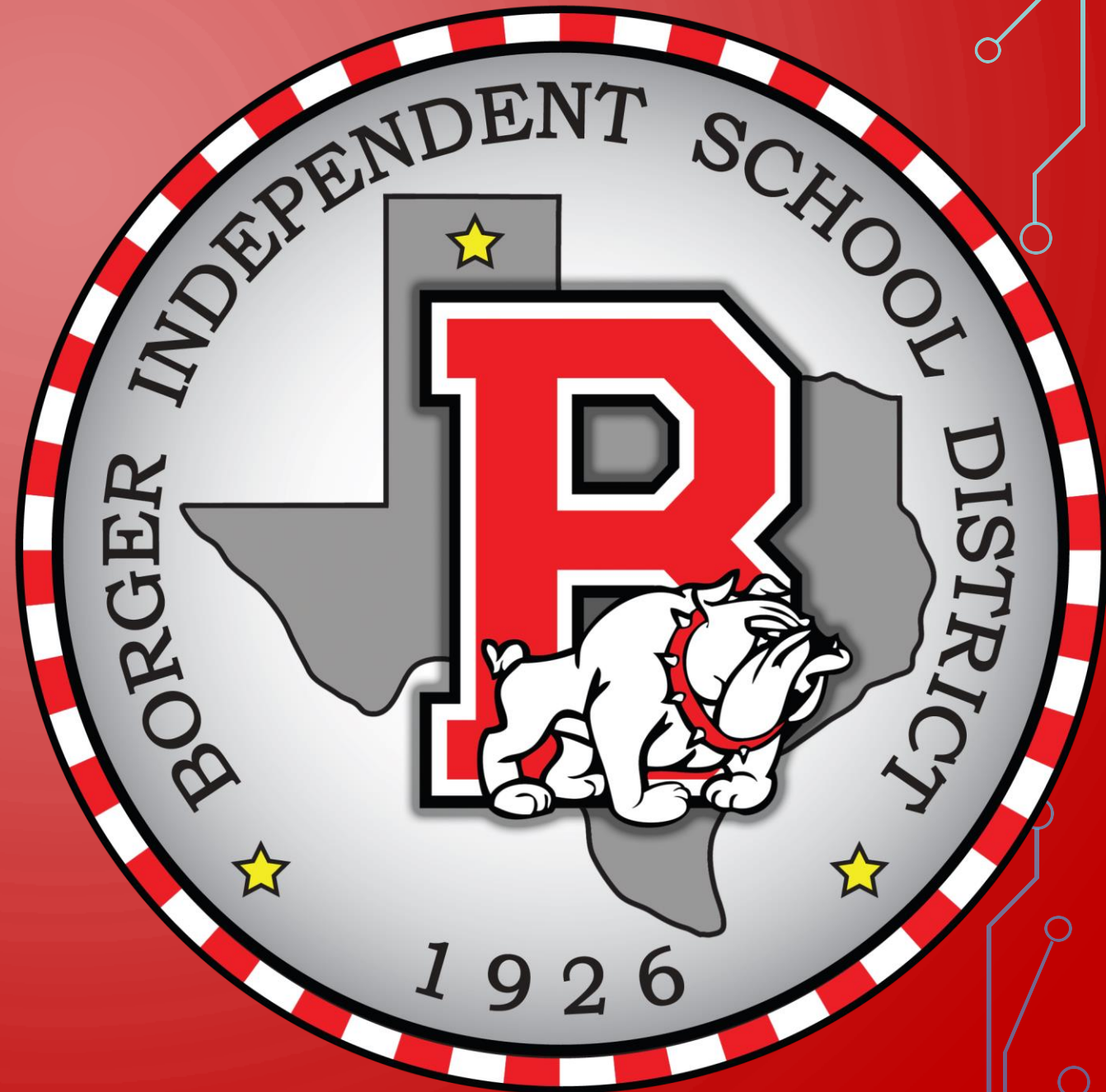
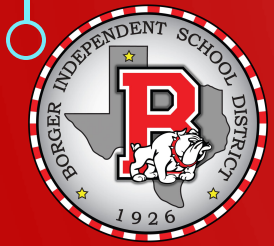


BOARD NOTES

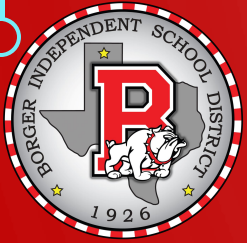
17 DECEMBER 2019





2A.3 (B) solve systems of three linear equations in three variables by using Gaussian elimination, technology with matrices, and substitution;

We will be able to calculate the solution for a system of equations using Gaussian elimination.



WHAT WE NEED:

- TI-84
- Definition:
 - Consistent
 - Inconsistent
- Solve for a variable

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Matrix



GOAL FOR
GAUSSIAN

$$\left[\begin{array}{ccc|c} 1 & \# & \# & \# \\ 0 & 1 & \# & \# \\ 0 & 0 & 1 & \# \end{array} \right]$$

GOAL
GAUSS-JORDAN

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & \# \\ 0 & 1 & 0 & \# \\ 0 & 0 & 1 & \# \end{array} \right]$$

$$\begin{cases} -x - 5y - 5z = 2 \\ 4x - 5y + 4z = 19 \\ x + 5y - z = -20 \end{cases} \rightarrow \left[\begin{array}{ccc|c} -1 & -5 & -5 & 2 \\ 4 & -5 & 4 & 19 \\ 1 & 5 & -1 & -20 \end{array} \right] \xrightarrow{\substack{4\textcircled{1} \\ 4\textcircled{3}}} \left[\begin{array}{ccc|c} -4 & -20 & -20 & 8 \\ 4 & -5 & 4 & 19 \\ 4 & 20 & -4 & -80 \end{array} \right]$$

|
0
0

Student Success - Students will have basic knowledge of scientific notation, foreign currency, and percentages. They will be aware of common errors and be able to analyze and solve related problems to locate affecting the change and conversion tables.

Math Literacy with Entrepreneurship Spirit - Students will be able to draw critical, logical reasoning, and insight, and they understand how to answer goals and objectives. They will be able to carry the mathematics to their economic opportunities and have the confidence to think and act independently.

Mathematical Technology User - Students will use technology as a tool to research, analyze, and evaluate goals and objectives. They will demonstrate knowledge of computers, internet, software applications, and the physical use of technology.

Accounting Values - Students will contribute energy, time, and resources to the benefit of themselves and others. They will exhibit a sense of social responsibility, and they will demonstrate honesty and integrity. They will be able to take responsibility for their actions.

1.1 (A) apply mathematics to problems arising in everyday life, society, and the workplace.

1.1 (A) apply mathematics to problems arising in everyday life, society, and the workplace.



$$\begin{array}{l} \textcircled{1} + \textcircled{2} \rightarrow \textcircled{2} \\ \textcircled{1} + \textcircled{3} \rightarrow \textcircled{3} \end{array} \begin{array}{l} \xrightarrow{-\frac{1}{4}\textcircled{1}} \\ \xrightarrow{-\frac{1}{2}\textcircled{2}} \\ \xrightarrow{-\frac{1}{24}\textcircled{3}} \end{array} \left[\begin{array}{ccc|c} -4 & -20 & -20 & 8 \\ 0 & -25 & -16 & 27 \\ 0 & 0 & -24 & -72 \end{array} \right] \xrightarrow{\begin{array}{l} \xrightarrow{-\frac{16}{25}\textcircled{3} + \textcircled{2} \rightarrow \textcircled{2}} \\ \xrightarrow{00 - \frac{16}{25} - \frac{48}{25}} \end{array}} \left[\begin{array}{ccc|c} 1 & 5 & 5 & -2 \\ 0 & 1 & \frac{16}{25} & -\frac{27}{25} \\ 0 & 0 & 1 & 3 \end{array} \right] \xrightarrow{\begin{array}{l} \xrightarrow{5\textcircled{2} + 0\textcircled{1}} \\ \xrightarrow{0 - 50 \textcircled{15}} \end{array}} \left[\begin{array}{ccc|c} 1 & 0 & 5 & 13 \\ 0 & 1 & 0 & -3 \\ 0 & 0 & 1 & 3 \end{array} \right] \rightarrow$$

$$\begin{aligned} X + 5y + 5z &= -2 \\ y + \frac{16}{25}z &= -\frac{27}{25} \\ z &= 3 \end{aligned}$$

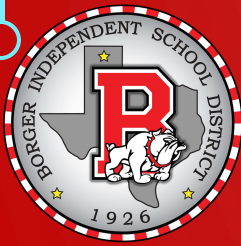
$$\begin{aligned} X &= -5(-3) - 5(3) - 2 \\ &= -2 \end{aligned}$$

$(-2, -3, 3)$

$$\begin{array}{l} -5\textcircled{3} + \textcircled{1} \rightarrow \textcircled{1} \\ \xrightarrow{00 - 5 - 15} \end{array} \left[\begin{array}{ccc|c} 1 & 0 & 0 & -2 \\ 0 & 1 & 0 & -3 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$X = -2$
 $Y = -3$
 $Z = 3$

$$\begin{aligned} y + \frac{16}{25} \cdot 3 &= -\frac{27}{25} \\ y + \frac{48}{25} &= -\frac{27}{25} \\ y &= -\frac{75}{25} \quad y = -3 \end{aligned}$$



$$\begin{cases} -x - 5y - 5z = 2 \\ 4x - 5y + 4z = 19 \\ x + 5y - z = -20 \end{cases}$$

* GAUSSIAN

$$1) \left[\begin{array}{ccc|c} -1 & -5 & -5 & 2 \\ 4 & -5 & 4 & 19 \\ 1 & 5 & -1 & -20 \end{array} \right]$$

$$2) \left[\begin{array}{ccc|c} 1 & -\frac{5}{4} & 1 & \frac{19}{4} \\ 0 & 1 & \frac{16}{25} & -\frac{27}{25} \\ 0 & 0 & 1 & 3 \end{array} \right]$$

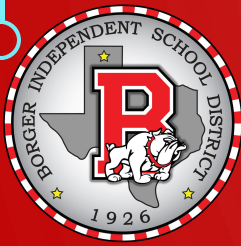
$$3) \begin{aligned} x - \frac{5}{4}y + z &= \frac{19}{4} \\ y + \frac{16}{25}z &= -\frac{27}{25} \end{aligned}$$

$$z = 3$$

$$4) \boxed{(-2, -3, 3)}$$

* GAUSS-

$$1) \left[\begin{array}{c} -1 \\ 4 \\ 1 \end{array} \right]$$



* GAUSS-JORDAN

$$1) \left[\begin{array}{ccc|c} -1 & -5 & -5 & 2 \\ 4 & -5 & 4 & 19 \\ 1 & 5 & -1 & -20 \end{array} \right]$$

$$2) \left[\begin{array}{ccc|c} 1 & 0 & 0 & -2 \\ 0 & 1 & 0 & -3 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$3) \begin{cases} x = -2 \\ y = -3 \\ z = 3 \end{cases}$$

$\frac{27}{25}$

8