Oakland CUSD #5

Pre-Calculus

April 20-24, 2020

William Sewell

Week: April 20-24, 2020

Teacher: William Sewell

Communication: email: william.sewell@oakland5.org or Google Hangout-Meet
Office hours: Monday and Wednesday: 12:00 to 2:00 p.m., Tuesday and Thursday: 12:00 to 1:00 p.m.
Due Date: All assignments are due 4/27/2020 either by sending a picture of it and turning it into Google Classroom or turning it into the office.
Assignments: All assignments will be in "Google Classroom" and a paper copy will be provided from the Oakland main office. I will have office hours as listed above which we can review the assignments given and I will help you as much as needed. However, the expectation is the same as it was before. I expect you to have made a serious effort to complete the assignment, before asking for help. You will not learn anything with me just giving you the answers.

Class	Choice 1	Choice 2	Choice 3 (Enrichment)
Earth Science	Collect 15 different rock samples. Take pictures or draw each and describe them: shape, various colors, size, sharp sides/ smooth, etc.	Take pictures of the moon and record the cycle that it is in from Monday through Friday. Please use the given table to complete. Please refer to page 779 in your book.	Repeat this activity for this week and make a comparison to last week, if you did this activity or wait til next week and compare it then. Take pictures of the moon and record the cycle that it is in from Monday through Friday. Please use the given table to complete. Please refer to page 779 in your book.
Physical Science	Record your (not family) water usage throughout the week. Please use the given table to complete.	Do speed lab of races. Record your distance and time yourself. Please use the given table to complete.	Graph your data of distance versus time. With distance on the vertical axis and time on the horizontal axis, using the given graph paper.
Chemistry	Do the Unit 5 worksheet entitled "The Mole". Use dimensional unit conversations to complete.	Unit 5: Relative Mass Lab video and write-up	Complete Unit 5 WS#2

Class	Choice 1	Choice 2	Choice 3 (Enrichment)
Pre-calculus	Matrix WS #2	Matrix WS #3	New problems: Watch videos on Inverse trigonometric functions and do 8 problems for the exercises. They will be assigned in Khan academy.

Name_____

Matrix Inverses and Determinants

Date Apr. 20-24 Period____

Sewell / Pre-Calc/Choice 1

p. 1 of 2

Evaluate each determinant.

1) $\begin{vmatrix} -1 & 2 \\ 1 & -4 \end{vmatrix}$

2) $\begin{vmatrix} 3 & 5 \\ -5 & -2 \end{vmatrix}$

3) $\begin{vmatrix} -4 & 4 \\ -5 & -3 \end{vmatrix}$

4) $\begin{vmatrix} -2 & 3 \\ 0 & 5 \end{vmatrix}$

5) $\begin{vmatrix} -5 & 2 & 1 \\ 1 & 0 & 0 \\ 0 & 4 & 0 \end{vmatrix}$

6) $\begin{vmatrix} -5 & -4 & 1 \\ -3 & 0 & 5 \\ -1 & 0 & 3 \end{vmatrix}$

7) $\begin{vmatrix} 3 & 3 & 1 \\ -3 & -1 & -3 \\ -4 & -3 & 1 \end{vmatrix}$

8) $\begin{vmatrix} -2 & 1 & -2 \\ 0 & 5 & -5 \\ 0 & 2 & -5 \end{vmatrix}$

For each matrix state if an inverse exists.

9) $\begin{bmatrix} 10 & -1 \\ 0 & 0 \end{bmatrix}$

10) $\begin{bmatrix} -10 & 5 \\ -2 & -1 \end{bmatrix}$

Find the inverse of each matrix.

11) $\begin{bmatrix} -3 & 1 \\ 9 & -1 \end{bmatrix}$

12) $\begin{bmatrix} -3 & -3 \\ -4 & -3 \end{bmatrix}$

13) $\begin{bmatrix} -4 & 0 \\ -8 & -1 \end{bmatrix}$

14) $\begin{bmatrix} 3 & -1 \\ -2 & 4 \end{bmatrix}$

For each matrix state if an inverse exists.

15) $\begin{bmatrix} 2 & -2 & 5 \\ -2 & 3 & -2 \\ 3 & -6 & -4 \end{bmatrix}$

16) $\begin{bmatrix} 2 & -1 & 3 \\ 1 & -1 & -3 \\ -2 & 0 & -4 \end{bmatrix}$

Find the inverse of each matrix.

17) $\begin{bmatrix} -2 & 5 & -2 \\ -2 & 2 & 0 \\ -3 & -2 & 2 \end{bmatrix}$

18) $\begin{bmatrix} 1 & 1 & -2 \\ -3 & -2 & 5 \\ -6 & 4 & 4 \end{bmatrix}$

Critical thinking questions:

19) For what value(s) of x does the matrix M have an inverse?

$$M = \begin{bmatrix} x & 1 \\ 2 & x+1 \end{bmatrix}$$

20) Give an example of a 3×3 matrix that has a determinant of 1.

Kuta Software - Infinite Precalculus

Name_____

Matrix Equations

Date Apr. 20-24 Period____

Sewell / Pre-Calc / Choice 2

p. 1 of 2

Solve each equation.

1) $X-\begin{bmatrix}6 & 6 & -2\end{bmatrix}=\begin{bmatrix}4 & -9 & 9\end{bmatrix}$

2) $-4A=\begin{bmatrix}-8 & -40 & 28\end{bmatrix}$

3) $\begin{bmatrix}0\\3\\10\end{bmatrix}-Y=\begin{bmatrix}-3\\-8\\12\end{bmatrix}$

4) $2X=\begin{bmatrix}16 & -18\\-20 & -4\end{bmatrix}$

5) $-3Z-\begin{bmatrix}6\\-3\end{bmatrix}=\begin{bmatrix}6\\-12\end{bmatrix}$

6) $3C+\begin{bmatrix}-8\\-9\end{bmatrix}=\begin{bmatrix}19\\9\end{bmatrix}$

7) $\begin{bmatrix}1 & 4\\1 & 0\end{bmatrix}+4X=\begin{bmatrix}21 & 36\\-3 & 4\end{bmatrix}$

8) $2B-\begin{bmatrix}-4 & -8 & -9 & 0\end{bmatrix}=\begin{bmatrix}2 & 14 & 7 & 16\end{bmatrix}$

9) $\begin{bmatrix}-9 & 9\\0 & -1\end{bmatrix}X=\begin{bmatrix}-36\\-6\end{bmatrix}$

10) $\begin{bmatrix}-24 & 33\\-4 & 18\end{bmatrix}=\begin{bmatrix}11 & -2\\6 & -2\end{bmatrix}X$

Solve each equation or state if there is no unique solution.

11) $\begin{bmatrix} 24 & 1 \\ -26 & -4 \end{bmatrix} = \begin{bmatrix} -3 & -5 \\ 2 & 5 \end{bmatrix} B$

12) $\begin{bmatrix} 24 \\ 40 \end{bmatrix} = \begin{bmatrix} 2 & 1 \\ 0 & 5 \end{bmatrix} X$

13) $\begin{bmatrix} 9 & -3 \\ -6 & 2 \end{bmatrix} A + \begin{bmatrix} -3 & -5 \\ 2 & 2 \end{bmatrix} = \begin{bmatrix} -48 & -32 \\ 32 & 20 \end{bmatrix}$

14) $\begin{bmatrix} -3 \\ 7 \end{bmatrix} - \begin{bmatrix} -3 & 0 \\ 5 & 1 \end{bmatrix} B = \begin{bmatrix} 21 \\ -39 \end{bmatrix}$

15) $\begin{bmatrix} 1 & -1 \\ 3 & 2 \end{bmatrix} C + \begin{bmatrix} 4 & -9 & -5 \\ -2 & 0 & 9 \end{bmatrix} = \begin{bmatrix} 12 & -12 & -15 \\ 7 & -24 & 4 \end{bmatrix}$

16) $\begin{bmatrix} 0 & -4 & 8 \\ 1 & -1 & -3 \\ 4 & -5 & -2 \end{bmatrix} + \begin{bmatrix} 2 & 2 & 1 \\ -5 & -8 & 2 \\ 1 & 3 & -1 \end{bmatrix} X = \begin{bmatrix} 1 & -22 & 13 \\ 33 & 23 & 13 \\ -8 & -12 & -11 \end{bmatrix}$