ALGEBRA 2/TRIG-H MATRICES ASSIGNMENTS
June 2012

YOU MAY NOT USE THE MATRIX AND DETERMINANT FUNCTIONS ON CALCULATORS FOR THIS UNIT.

HW #	Assignment
M1	**Textbook:** page 203—32, 36; page 211—12, 14, 17, 19, 21, 25; page 218—15, 19, 21, 25
	Extra Problems: 1. Find x, y, and z: $\begin{bmatrix} 8-y & 5 \\ x+2z & x+z \end{bmatrix} = \begin{bmatrix} -3y & 5 \\ -5 & -1 \end{bmatrix}$ 2. Solve for the matrix X: $3X + \begin{bmatrix} -9 & 2 \\ 1 & -5 \end{bmatrix} = \frac{1}{3}\begin{bmatrix} 9 & -3 \\ -6 & 12 \end{bmatrix}$ 3. Find x: $\begin{vmatrix} 2x+3 & x \\ -2 & x-2 \end{vmatrix} = 4$ 4. Find x: $\begin{vmatrix} 1 & 3 & 4 \\ 5 & 15 & 10 \\ -1 & x & 2 \end{vmatrix} = 80$
M2	**Textbook:** page 211—9, 29, 33; page 218—37, 43, 47, 51
	Extra Problems: 5. A high school is selling school-themed car flags and bears. Matrix P shows the prices of the flags and bears and matrix N shows the number sold over a three-day period. Use matrix multiplication to determine on which day the greater amount of money was taken in from the sale of the items and the dollar amount taken in on that day. prices (in dollars): flag, bear — $P = [\ 12 \quad 15\ ]$ number sold: Mon., Tues., Wed. — $N = \begin{bmatrix} 25 & 30 & 22 \\ 18 & 22 & 15 \end{bmatrix}$ (flags, bears) 6. Write a system of 3 equations using 3 variables and use Cramer's Rule to solve the system. In a triangle, the sum of the first angle and twice the second angle equals the third angle. Four times the second angle is 15 degrees more than the third angle. Find the measures of all three angles.

Extra Problems Answers: 1. $x = 3, y = -4, z = -4$ 2. $\begin{bmatrix} 4 & -1 \\ -1 & 3 \end{bmatrix}$ 3. $2, \frac{-5}{2}$ 4. 5 5. Tuesday, \$690

6. $\angle A = 45°,\ \angle B = 30°,\ \angle C = 105°$

Assignment M3 -- Matrices Practice Problems

Perform the indicated operations.

1. $3\left(\begin{bmatrix}1 & 0\\ 2 & 1\end{bmatrix}+\begin{bmatrix}4 & 2\\ 0 & 3\end{bmatrix}\right)-\begin{bmatrix}1 & 1\\ -3 & 2\end{bmatrix}$

2. $\begin{bmatrix}10 & 4 & 6\\ 5 & 6 & 8\\ -2 & 7 & -1\end{bmatrix}\begin{bmatrix}3 & 5\\ 0 & -4\\ -1 & 0\end{bmatrix}$

3. $\begin{bmatrix}1 & 3\\ -2 & 0\end{bmatrix}\begin{bmatrix}5 & 2\\ 1 & -1\end{bmatrix}+\begin{bmatrix}-1\\ -2\end{bmatrix}\begin{bmatrix}2 & -3\end{bmatrix}$

Solve for x and y.

4. $-3\begin{bmatrix}x+2\\ y-3\end{bmatrix}=\frac{1}{2}\begin{bmatrix}10\\ 6\end{bmatrix}$

5. $\begin{bmatrix}x+y & -5\\ 0 & x-2y\end{bmatrix}=\begin{bmatrix}7 & -5\\ 0 & 1\end{bmatrix}$

Use Cramer's Rule to solve each system:

6. $\begin{aligned}3x-2y&=-12\\ 5x+6y&=19\end{aligned}$

7. $\begin{aligned}x+y+z&=80\\ x-2y-2z&=-10\\ 2y-z&=6\end{aligned}$

8. Solve for matrix X: $2X+3\begin{bmatrix}0 & 2\\ -4 & 3\end{bmatrix}=\begin{bmatrix}8 & 10\\ 15 & -7\end{bmatrix}$

9. Solve the determinant for x: $\begin{vmatrix}2 & 3 & -2\\ 1 & x & 3\\ x & 0 & 1\end{vmatrix}=-8$

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Answers: 1. $\begin{bmatrix}14 & 5\\ 9 & 10\end{bmatrix}$ 2. $\begin{bmatrix}24 & 34\\ 7 & 1\\ -5 & -38\end{bmatrix}$ 3. $\begin{bmatrix}6 & 2\\ -14 & 2\end{bmatrix}$ 4. $x=\frac{-11}{3},\ y=2$

5. $x=5, y=2$ 6. $\left(\frac{-17}{14}, \frac{117}{28}\right)$ 7. (50, 12, 18) 8. $\begin{bmatrix}4 & 2\\ 13.5 & -8\end{bmatrix}$

9. x = -5, $\frac{-1}{2}$