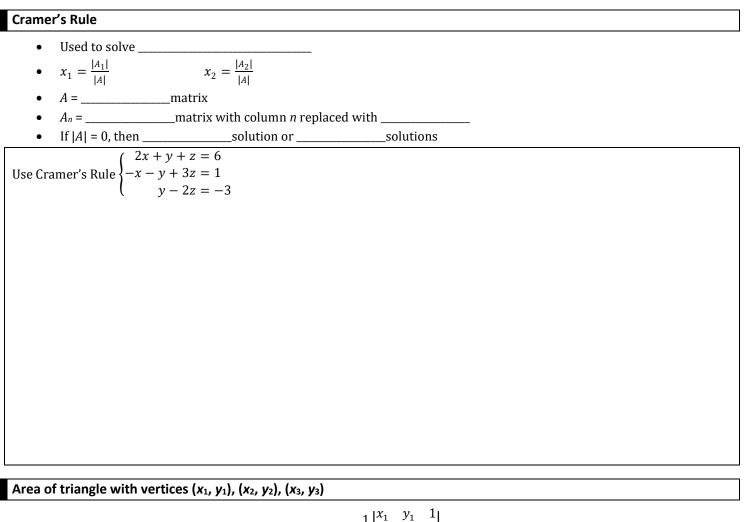
Precalculus

9-06 Applications of Matrices



$$Area = \pm \frac{1}{2} \begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}$$

Find the area of triangle with vertices (-3, 1), (2, 4), (5, -3)

		x_1	\boldsymbol{y}_1	1	
•	If	<i>x</i> ₂	y_2	1	= 0, then the points are collinear
		<i>x</i> ₃	y_3	1	

Find equation of line given 2 points (x_1, y_1) and (x_2, y_2)

 $\begin{vmatrix} x & y & 1 \\ x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \end{vmatrix} = 0$

Find the equation of the line passing through (-2, 9) and (3, -1)

Hill Cyp	_= 0	I = 9	R = 18	
1.	Convert the message into	A = 1	J = 10	S = 19
2.	Choose aencoding matrix.	B = 2	K = 11	T = 20
3.	the message numbers into matrices of 1 row and the same number ofas the encoding matrix.	C = 3	L = 12	U = 21
4.	the letter matrices with the encoding matrix.	D = 4	M = 13	V = 22
5.	The encoded message is the list ofproduced.	E = 5	N = 14	W = 23
6.	Decode by usingof encoding matrix	F = 6	0 = 15	X = 24
Encode LUNCH using $\begin{bmatrix} 1 & 0 \end{bmatrix}$			P = 16	Y = 25
Elicode	Encode LUNCH using $\begin{bmatrix} 1 & 0 \\ 2 & -3 \end{bmatrix}$			Z = 26