Universiti Malaysia PAHANG (Engineering • Technology • Creativity) **FACULTY OF INDUSTRIAL SCIENCES & TECHNOLOGY**	**SUBJECT:** MATHEMATICS FOR MANAGEMENT			**MARKS**: /10
	CODE: BUM1123	**TOPIC:** MATRIX ALGEBRA		
	ASSESSMENT: QUIZ	**NO:** 1	**DUE/DURATION:** 10 MINUTES	
NAME:		**STUDENT ID:**	**SECTION:**	

1. Solve the system of linear equation using the inverse matrix coefficients $(A)^{-1}$ or using matrix reduction $\left(\left[A|I\right]\right)$

$$3x+6y-5z=-5$$
$$4x-7y+2z=-6$$
$$-x+8y+9z=93$$

(10 Marks)

No	Answer	Marks
1	$3x+6y-5z=-5$ $4x-7y+2z=-6$ $-x+8y+9z=93$	
	$\begin{pmatrix}3 & 6 & -5\\ 4 & -7 & 2\\ -1 & 8 & 9\end{pmatrix}\begin{pmatrix}x\\ y\\ z\end{pmatrix}=\begin{pmatrix}-5\\ -6\\ 93\end{pmatrix}$	**B1**
	$\text{adj}\,A=\begin{bmatrix}+\begin{vmatrix}-7 & 2\\ 8 & 9\end{vmatrix} & -\begin{vmatrix}4 & 2\\ -1 & 9\end{vmatrix} & +\begin{vmatrix}4 & -7\\ -1 & 8\end{vmatrix}\\ -\begin{vmatrix}6 & -5\\ 8 & 9\end{vmatrix} & +\begin{vmatrix}3 & -5\\ -1 & 9\end{vmatrix} & -\begin{vmatrix}3 & 6\\ -1 & 8\end{vmatrix}\\ +\begin{vmatrix}6 & -5\\ -7 & 2\end{vmatrix} & -\begin{vmatrix}3 & -5\\ 4 & 2\end{vmatrix} & +\begin{vmatrix}3 & 6\\ 4 & -7\end{vmatrix}\end{bmatrix}^T$	**M1**
	$=\begin{bmatrix}-79 & -38 & 25\\ -94 & 22 & -30\\ -23 & -26 & -45\end{bmatrix}^T$	
	$=\begin{bmatrix}-79 & -94 & -23\\ -38 & 22 & -26\\ 25 & -30 & -45\end{bmatrix}$	**A1**
	$\lvert A\rvert=-1\begin{vmatrix}6 & -5\\ -7 & 2\end{vmatrix}-8\begin{vmatrix}3 & -5\\ 4 & 2\end{vmatrix}+9\begin{vmatrix}3 & 6\\ 4 & -7\end{vmatrix}$	**M1**
	$=+(-1)(-23)-8(26)+9(-45)$	
	$=23-208-405$	**A1**
	$=-590$	
	$\begin{pmatrix}x\\ y\\ z\end{pmatrix}=\frac{-1}{590}\begin{bmatrix}-79 & -94 & -23\\ -38 & 22 & -26\\ 25 & -30 & -45\end{bmatrix}\begin{bmatrix}-5\\ -6\\ 93\end{bmatrix}$	**M1**
	$=\begin{pmatrix}2\\ 4\\ 7\end{pmatrix}$	**A1** **A1** **A1**
		3 Marks