

MATH 232 SAMPLE MIDTERM 1 KEY

QUESTION	Answer	MAX	SCORE
1	$c = -1$	3	
2	$w = -3v + v$	4	
3	$AB = \begin{bmatrix} 1 & a_{12} + b_{12} & a_{13} + b_{13} & \dots & a_{1n} + b_{1n} \\ 0 & 1 & 0 & \dots & 0 \\ 0 & 0 & 1 & \dots & 0 \\ \vdots & \vdots & \vdots & \dots & \vdots \\ 0 & 0 & 0 & \dots & 1 \end{bmatrix}$	4	
4	$\begin{bmatrix} 1 & 0 & 2 & 0 \\ 0 & 1 & -2 & -2 \\ 0 & 0 & 0 & 0 \end{bmatrix}$	4	
5	$c = -16$	5	
6	Yes, $b$ is in the span <input checked="" type="checkbox"/> No, $b$ is not in the span <input type="checkbox"/> Brief reason: $b = v_1 + v_2 + v_3$	5	
7	$x = \begin{bmatrix} 1 \\ 3 \\ 0 \\ 0 \end{bmatrix} + a \begin{bmatrix} -1 \\ -1 \\ 1 \\ 0 \end{bmatrix} + b \begin{bmatrix} 1 \\ 2 \\ 0 \\ 1 \end{bmatrix}$	5	
8	$A^{-1} = \begin{bmatrix} 1 & 0 & -2 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1/7 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 3 & 0 & 1 \end{bmatrix}$	5	
9	$\{[-5 \ 4 \ 1 \ 0], [4 \ -3 \ 0 \ 1]\}$	5	

TOTAL	
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