

## QUIZ NUMBER 8 FOR MTH 221 AT 2PM

AYMAN BADAWI

Name \_\_\_\_\_, Id. Num. \_\_\_\_\_, Score  $\frac{\quad}{15}$

**QUESTION 1.** 1) Let  $F = \left\{ \begin{bmatrix} -6c \\ 2b+c \\ b \\ c \end{bmatrix} \mid b, c \in R \right\}$  is a subspace of  $R^4$ . Find a basis for  $F$ .

2) Let  $D = \{g(x) \in P_3 \mid g(1) = 0 \text{ and } g(-1) = 0\}$  be a subspace of  $P_3$ . Find a basis for  $D$ .

3) Find a basis for  $M = \text{Span}\{1 + 2x + x^3, -1 + x - x^3, 2 - x + 2x^3, x\}$ . Is  $M = P_4$ ?

DEPARTMENT OF MATHEMATICS & STATISTICS, AMERICAN UNIVERSITY OF SHARJAH, P.O. BOX  
26666, SHARJAH, UNITED ARAB EMIRATES  
E-mail address: [abadawi@aus.edu](mailto:abadawi@aus.edu), [www.ayman-badawi.com](http://www.ayman-badawi.com)