Math 270 HW#14

Name:_____ Date:_____

Show your work very clearly, neatly, and box your final answer.

One Side Only

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1. Write standard basis for the vector space $\mathbf{M}_{2,4}$.

2. Determine whether $S = \{(0,3,-2),(4,0,3),(-8,15,-16)\}$ is a basis for R^3.

3. Determine whether $S = \{6x - 3, 1 - 2x - x^2, 3x^2\}$ is a basis for P_2.

4. Consider $W = \{(x + 4y, y, x, 2x - y) : x \in \mathbb{R}, y \in \mathbb{R}\}$:

a. Show that W is a subspace of R^4.

b. Find a basis for W.

C. Find the dimension of W.