| MA 237-02 <br> §4.1-5.2 | Quiz \#5 |  | score |
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Instructions: Work the following problems on your own paper and turn them in no later than Thursday morning 11/15/01.

1. Find the coordinates of the point $(1,2,3)$ in the basis of $\mathbb{R}^{3}$ given by the vectors $(1,0,1)^{t}$, $(2,1,2)^{t},(0,3,1)^{t}$. (4 points)
2. The three vectors $(1,1,1,0),(2,0,0,1)$, and $(0,2,1,3)$ span a 3 -dimensional subspace of $\mathbb{R}^{4}$. Find an orthonormal basis for this subspace. Then find an orthonormal basis for $\mathbb{R}^{4}$ that includes these three vectors. (4 points)
3. Work problem 1(e) on page 287. (4 points)
4. Work problem 12 on page 288. (4 points)
5. Work problem 13 on page 288. (4 points)
