

Math 256
Applied Honors Calculus IV: Differential Equations, Fall 2007

Homework Set 9
Due Friday, Nov 9, 2007

Reading. For Linear Algebra read Chapter 2 of Keith Miller's Linear Algebra Notes. A link to the URL on the course web site. Omit S2.3. The material on row operation matrices E is interesting but to save time, we do not cover it. The classroom coverage is a bit more streamlined. My notes are on the office door in the "black book".

A word to the wise. Rather than working many routine examples it is better to work a few and to think carefully about what you have done to make sure that you master all the fundamentals. Ask yourself what variations are possible and how that might change what needs to be done.

Problems to Study.

- Linear Algebra from K. Miller §2.7. 1(elementary matrices not required), 3,6,7,9,10,14b,e,f, 15,18,21, 22(least squares not required),24,25.
- Linear Algebra from Keith Miller §3.6. 4. There are many strategies. You can use determinants. You can use volumes. You can ask whether the third vector is perpendicular to the normal to the plane spanned by the other two. These are all good and you should try to understand them. The desired solution uses the definition of dependence. You find an equation for the coefficients in the linear combination and ask whether it has a not all zero solution.
- Linear Algebra from Boyce and DiPrima §7.2. 1-6,10-19
- Linear Algebra from Boyce and DiPrima §7.3. 1-10
- Linear Algebra from K. Miller §3.6. 1,3,12,13($F = \mathbb{R}$),15($F = \mathbb{R}$).

Problems to Hand In.

- Linear Algebra from K. Miller §2.7. 2,4,8,14a,c,d,26. Problem 14 counts as three problems.
- Linear Algebra from K. Miller §3.6. 5.