MATH 211   ASSIGNMENT 6

Fall 2008

All problems, unless otherwise noted, taken from textbook : D. Lay, Linear Algebra and its Applications. Answers to True-False questions at bottom.

1. Section 6.1 : 3,5,7,10,13,15-18,19a,b,c,20a,b,d,24,27

2. Section 6.2 : 1,3,11-16
   Prove that if $\parallel \vec{u} \parallel^2 + \parallel \vec{v} \parallel^2 = \parallel \vec{u} + \vec{v} \parallel^2$, then $\vec{u} \perp \vec{v}$.
   Prove that if $(\vec{u} + \vec{v}) \perp (\vec{u} - \vec{v})$, then $\parallel \vec{u} \parallel = \parallel \vec{v} \parallel$.

3. Virtual Quiz 7

4. Write $(2 - i)(3 + 4i)$ in the form $a + bi$.

5. Write $\dfrac{2 + 3i}{3 - 5i}$ in the form $a + bi$.

6. Write $-2 + 2i$ and $\sqrt{3} - i$ in polar form.

7. Find $(-1 - i)^{12}$ using polar form.

8. Find all solutions to $z^3 = 1$, and to $z^3 = -1$.

Answers
6.1 19 : TTTFT
6.1 20 : TFTTT