Problem 1 Monday 11/13
Do Problem #10 from section 6.3 in your book. (For (a), just explain in your own words: Why is $u$'s length constant? And why is that constant the length of $u(0)$?)

Problem 2 Wednesday 11/15
Do Problem #11 from section 6.4 in your book. (Answer in back, but try it yourself first.)

Problem 3 Wednesday 11/15
Do Problem #18 from section 6.4 in your book.
Then show the converse: if $A$ has a complete set of orthonormal eigenvectors with real eigenvalues, then it must be symmetric. (*Hint: diagonalize.*)

Problem 4 Wednesday 11/15
Do Problem #27 from section 6.4 in your book.

Problem 5 Friday 11/17
Do Problem #7 from section 6.5 in your book.
Use all four tests for each of these: find the pivots, the eigenvalues, the upper-left determinants, and the “quadratic form” $x^T M x$.

Problem 6 Friday 11/17
Do Problem #20 from section 6.5 in your book.

Problem 7 Friday 11/17
Do Problem #28 from section 6.5 in your book.
Then sketch the ellipse $x^T A x = 1$ for $\theta = \pi/4$. Draw in the eigenvectors.