

# V63.0140-3: Linear Algebra. Homework 11

Last one! Due Thurs Dec 4 at start of lecture.

## 6.1:

19.

## 6.2:

10.

16.

29. This is nice: it tells you that if you perform any two successive rotations, the result is also a rotation (you know that from geometry).

## 6.3:

3.

8.

12.

16.

19. This is a warm-up for Gram-Schmidt.

21. If you are stuck, sketch your standard  $\mathbb{R}^3$  space in 3d, with  $W$  being a plane sitting in it.

## 6.4:

1.

8.

10. Yucky hand calculations. Remember to rescale each  $\mathbf{v}$  to integer numbers to make easier.

## 6.5:

4.

5.

8.

9.

6.7: (just an introduction to what can be done with orthogonal polynomials...)

3.

7.

10.