

Course 2E2 2008-09 (SF Engineers & MSISS & MEMS)**S h e e t 4**

Due: at the end of the tutorial

Exercise 1

- (i) Find parametric equations for the line spanned by the vector:

$$\mathbf{u} = (1, -2, 1);$$

- (ii) Give two equations that determine the line in (i).
(iii) Find an equation for the plane spanned by the vectors:

$$\mathbf{u} = (1, 2, -1), \quad \mathbf{v} = (-1, 0, 1).$$

Exercise 2

Which of the following sets of vectors are linearly dependent?

- (i) $(0, 1), (0, -2)$;
(ii) $(1, 1), (0, 1), (2, 1)$;
(iii) $(0, 1, 0), (1, 1, 0), (0, 2, 0)$;
(iv) $(0, 1, 0), (1, 1, 0), (1, 1, 1)$;
(v) $(0, 0, 0, 0, 0), (1, -2, 1, 1, 1)$.