**2E2 Tutorial Sheet 15 Second Term**[1]

17 February 2004

1. (3) By linearizing around the critical points, draw the phase plane portrait of

$$y'' + y - y^3 = 0 \qquad (1)$$

2. (3) By linearizing around the critical points, draw the phase plane portrait of

$$y'' = \cos 2y \qquad (2)$$

3. (3) By linearizing, sketch the phase space trajectories of

$$y'' = -y' + y - y^2 \qquad (3)$$

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