

Hints and Answers for Section 3.8

1. Differentiate $\mathbf{Y}_2(t)$ and $\mathbf{Y}_3(t)$ coordinate by coordinate to see if the system of differential equations is satisfied.
3. (a) not linearly independent
(b) linearly independent
(c) linearly independent
(d) linearly independent
5. (a) $\pm 1, -5$
(b) The system decouples into a two-dimensional system in the xy -plane and a one-dimensional system in z .
(c) There is a sink on the z -phase line and a saddle in the xy -phase plane.

