Homework 5

Due: Fri. Feb. 18, 2005

Section 14.4, pg. 914: 6, 16, 22, 34, 40.
Section 15.1, pg. 933: 6, 16, 32, 53–58, 60.
Section 15.2, pg. 944: 6, 8, 28, 36, 42.

Additional Problem:

1. Dave is riding the "corkscrew roller-coaster in an amusement park. he has a photo camera and wants to take a picture of his girlfriend who is waiting for him on the ground at the point $P(12, 8, 11)$. Because of the restraints, Dave can only hold the camera looking forward, and can take pictures only in the direction of the motion of the roller-coaster. The motion of Dave as a function of time t is given by

$$\begin{aligned} x_{\text{D}}(t) &= t^2, \\ y_{\text{D}}(t) &= 2t, \\ z_{\text{D}}(t) &= 3t - 1. \end{aligned}$$

Find the moment at which Dave has to take the picture of his girlfriend.