Worksheet 2 – Skydiving!   - MAC 2312, Fall 2013

1. (adapted from Briggs Calculus) A skydiver leaps from a hovering helicopter and falls in a straight line. Suppose he falls at a terminal velocity of 80 m/s for the first 20 seconds, at which time he opens his parachute. The velocity decreases linearly to 4 m/s over a four-second period and then remains constant until he reaches the ground at $t = 50$ s.

(a) Find a piece-wise defined function that determines the velocity $v(t)$, for $0 \leq t \leq 50$.

(b) Determine the altitude from which the skydiver jumped.

(c) What is the average velocity of the skydiver over the duration of his jump?