Writing Assignment 8

The purpose of this writing assignment is to prepare you for the material we will learn in chapter 6, and refine your skills relating to antidifferentiation as well as translation of graphs. Homework problem 5.1:1(d) is very similar to this problem.

Jason is running home. His velocity $v(t)$ (in meters per second) is shown in the graph below. He is rather absentminded, and drops things along the way, so he has to turn around and stop at various times.

1. Graph a continuous antiderivative of $v(t)$ which passes through the origin.

2. Use your graph from question 1 to say how far has Jason traveled after

   (a) 10 seconds?  (d) 40 seconds?
   (b) 20 seconds?  (e) 50 seconds?
   (c) 30 seconds?  (f) 60 seconds?

3. Comment on the relationship between your answers in question 2 and finding the distance Jason traveled by estimating the area under the graph.