

1. (5 points)

Test track trials have shown that a DeLorian can accelerate from 0 to 60 miles per hour in 4 seconds.

(a) Assuming that the DeLorian undergoes constant acceleration, find a function  $v(t)$  that gives the velocity of the DeLorian in  $\frac{ft}{s}$  as a function of time, in seconds.

(b) If Marty gets into a DeLorian parked at the Twin Pines Mall and accelerates toward 90 mph, how long will it take him to get the DeLorian up to exactly 88 mph?

(c) If there is a photomat exactly 380 feet in front of his starting location and he drives straight toward it, will he get to 88 mph before running into the photomat? Justify your answer.