

**CSE 275, HW5, Fall04**  
**T. J. Peters**  
**Due, Tuesday, December 7, in class**  
**Hard Copy, Word Processed**  
**10pts, each part worth 2.5pts**

Consider the planar cubic Bezier curve given by the equation

$$c(t) = (1-t)^3 P_0 + 3(1-t)^2 t P_1 + 3(1-t)t^2 P_2 + t^3 P_3,$$

where

$$P_0 = (0, 0), P_1 = (7, 9), P_2 = (8, 9), P_3 = (11, 4).$$

a. Write out an expression for

$$c'(t) = \frac{dc}{dt}$$

as a function of  $t$ .

b. Evaluate  $c'(0)$  using the expression generated in Part a.

c. Evaluate  $c'(1)$  using the expression generated in Part a.

d. Does this support the statement that the first and last legs of the control polygon are the tangent lines at the end points? Explain your answer.