1. Find the path c such that c(0)=(0, -5, 1) and c’(t)=(t, et, t2).
2. Let c(t) be a path, v(t) its velocity, and a(t) the acceleration. Suppose F is a C1 mapping of 3 to 3, m>0, and F(c(t))=ma(t) (Newton’s second law). Prove that
3. Find the arc length of the given curve on the specified interval.

), for 0

1. Let c be the path Find the arc length of c between the two points (0,0,0) and ().
2. Let c: [a,b] be an infinitely differentiable path (derivatives of all orders exist). Assume c’(t)0 for any t. the vector c’(t)/ is tangent to c at c(t), and, because =1, T is called the unit tangent to c.
3. Show that T’(t)T(t)=0.
4. Write down a formula for T’(t) in terms of c.