Evans 03

#9 let u and v be parametric curves in 3-D that satisfy

$u' = v - u$ $\qquad ' = \frac{d}{dt}$

$v' = v + u$

Show that $u \times v = \text{constant}$

$\frac{d}{dt} u \times v = 0$

cross product identity

$u' \times v + u \times v' = 0$

$(v-u) \times v + u \times (v+u) = 0$

$v \times v - u \times v + u \times v + u \times u = 0$

$0 = 0$