1154-VO-1903 **Alan R Parry*** (alan.parry@uvu.edu). *Normal Vectors and Space Curves.*

It is well known that the curvature and torsion of a curve in $\mathbb{R}^3$ determines the curve up to a rigid motion. We also know that the binormal vector function determines the curvature and torsion. Moreover, the unit tangent vector function determines the curve up to translation. However, an exercise in do Carmo's classical text on Curves and Surfaces claims that knowing the unit normal vector function at every point also determines the curvature and the torsion. We provide counter examples to do Carmo's exercise and show what condition must be added to obtain the correct result and its proof. (Received September 16, 2019)