

Homework to be handed in: Problem No. 1 in §13.5 and the following **Exercise**. Consider

$$\mathbf{r}(t) = t\mathbf{i} + a\frac{t^2}{2}\mathbf{j} + b\frac{t^3}{6}\mathbf{k}$$

where a and b are given constants (not both 0). Compute the unit tangent vector, principal unit normal vector, binormal vector, (whenever these quantities make sense). Compute the curvature and torsion at time t (and point $\mathbf{r}(t)$).