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expressions for curvature and torsion

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For a <http://planetmath.org/Curve> regular, parameterized curve $\alpha: (a, b) \rightarrow \mathbb{R}^3$, not necessarily unit speed, the curvature $\kappa(t)$ and torsion $\tau(t)$ are given, respectively, by

$$\kappa(t) = \frac{\|\alpha'(t) \times \alpha''(t)\|}{\|\alpha'(t)\|^3};$$
$$\tau(t) = \frac{(\alpha'(t) \times \alpha''(t)) \cdot \alpha'''(t)}{\|\alpha'(t) \times \alpha''(t)\|^2}.$$

References

John McCleary, *Geometry from a Differentiable Viewpoint*, Cambridge University Press, 1994.