Homework Due January 28 (Monday), 2008

Problem A 2.4 (p. 23)

Problem B 3.7 (p. 29)

Problem C:

(a) Let $\gamma(t)$ be a curve, not necessarily unit speed with s = arclength as a function of t.

Then: $\gamma'(t) = \left(\frac{ds}{dt}\right) T$

and

$$\gamma''(t) = \left(\frac{d^2s}{dt^2}\right) T + \left(\frac{ds}{dt}\right)^2 \kappa N$$

(b) Deduce from part (a) that

$$K = \frac{\| \gamma' \times \gamma'' \|}{\| \gamma' \|^3}$$

Problem D: 4.4 (p. 35)

Numbered problems are from Millman & Parker