

$\gamma$  unit speed?

Yes

No

Compute Frenet  
frame  $\{t, n, b\}$



$$\kappa = \|\ddot{\gamma}\| = \|\dot{t}\|$$

$$\tau = -\dot{b} \cdot n$$

Yes

Can you  
compute arc-length  
reparametrization?

$\Downarrow$  No

Use formulas

$$\kappa = \frac{\|\dot{\gamma} \times \ddot{\gamma}\|}{\|\dot{\gamma}\|^3}$$

$$\tau = \frac{(\dot{\gamma} \times \ddot{\gamma}) \cdot \dddot{\gamma}}{\|\dot{\gamma} \times \ddot{\gamma}\|^2}$$

**Warning**

$\kappa$  is only defined  
for regular  $\gamma$

$\tau$  is only defined for  
regular  $\gamma$  with  $\kappa \neq 0$