

$$\begin{aligned} |\vec{s}(t)| &= r \\ |\vec{v}(t)| &= \omega r \\ |\vec{a}(t)| &= \omega^2 r \\ |\vec{F}_Z(t)| &= m\omega^2 r \\ \omega &= \frac{2\pi}{T} \end{aligned}$$

$$f = \frac{1}{T}$$

$$\omega = 2\pi f$$

$$v = \frac{2\pi r}{T} = \omega r$$

$$\omega = \frac{v}{r}$$

$$a(t) = \omega t$$