

$$|\vec{s}(t)| = r$$

$$|\vec{v}(t)| = \omega r$$

$$|\vec{a}(t)| = \omega^{2} r$$

$$|\vec{F}_{Z}(t)| = m\omega^{2} r$$

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

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

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

 $\omega = 2\pi f$

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