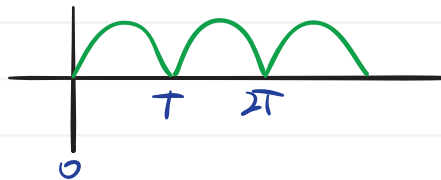


$$T = \frac{2\pi}{\omega} \cdot \frac{1}{2} = \frac{\pi}{\omega}$$

1/

Input:  $u(t) = |\sin \omega t|$



Fourier series components:

$$\begin{aligned} F_n &= \frac{1}{T} \int_0^T \sin(\omega t) e^{-jn\omega t} dt \\ &= \frac{1}{T} \int_0^T \frac{1}{2j} (e^{j\omega t} - e^{-j\omega t}) e^{-jn\omega t} dt \\ &= \frac{1}{T} \int_0^T \frac{1}{2j} (e^{j(\omega-n\omega)t} - e^{-j(\omega+n\omega)t}) dt \end{aligned}$$