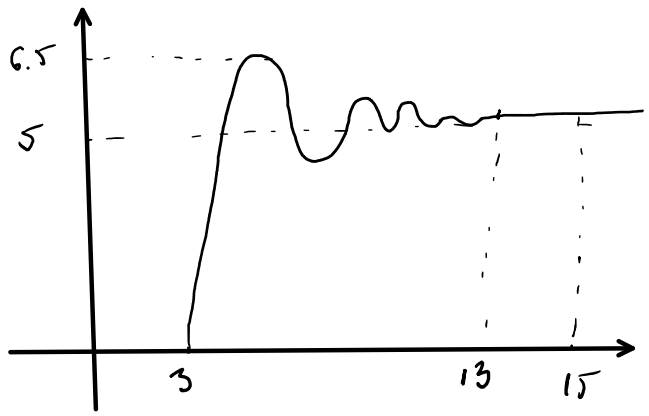
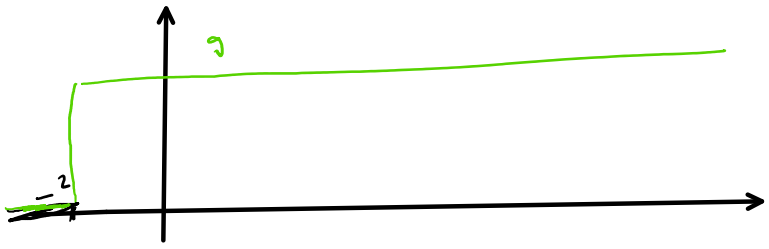


$u(t) = 9 \cdot 1(t+2)$

$$H(s) = \frac{k \cdot \omega^2}{s^2 + 2\zeta\omega s + \omega^2} \cdot e^{-2s}$$

$\zeta = 5$

$k = \frac{y_{st}}{\alpha} = \frac{5}{9}$



$t_{2\%} = 13 - 3 \cong 10$

$\nabla = \frac{y_{max} - y_{st}}{y_{st}} \cdot 100 = \frac{6.5 - 5}{5} \cdot 100 = \frac{1.5}{5} \cdot 100 = 30$

$\nabla = 30\% \longrightarrow \zeta = 0.3$

$t_{2\%} = \frac{4}{3\omega}$ ← $\omega = \frac{4}{3 \cdot t_{2\%}}$

$\omega = \frac{4}{0.3 \cdot 10} = \dots$

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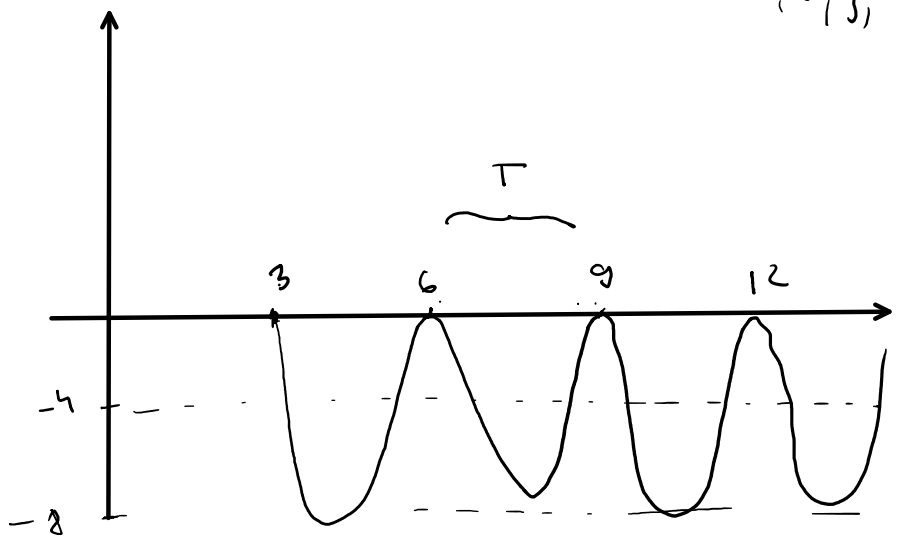
k, ω, ζ

$\zeta = 5$

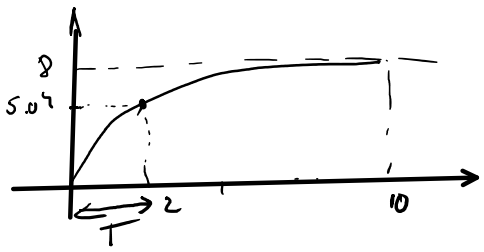
$\zeta = 0$

$k = \frac{y_{st}}{\alpha} = -\frac{4}{9}$



$\omega = \frac{2\pi}{T} = \frac{2\pi}{3}$

$$H(1) = \frac{k}{T \cdot s + 1} \cdot e^{-\tau s}$$



$\tau = 2$

$k = \frac{8}{9} =$