① $\frac{1}{2\pi} \cos 400\pi 6 \cdot \cos(200\pi t)$

$= \frac{1}{2\pi} \left[\frac{1}{2} [\cos(400\pi t - 200\pi t) + \cos(400 + 200\pi t)] \right]$

$= \frac{1}{4\pi} [\cos(\underbrace{200\pi t}_{\omega_1}) + \cos(\underbrace{600\pi t}_{\omega_2})]$

نأخذ الأولى

$\omega = 2\pi f_{max}$

$600\pi = 2\pi f_{max}$

$f_{max} = \frac{600\pi}{2\pi}$

$= 300$ Hz

$nyquist\text{-}interval = \frac{1}{2 f_{max}} = \frac{1}{2 \times 300} = \frac{1}{600} =$

$= 0.00166$

$nyquist\ rate = 2 f_{max} = 2 \times 300 = 1.66$ msec

$= 600$ Hz

② $\frac{1}{\pi} \sin \frac{\pi t}{\omega}$

$\omega = 2\pi f$

$\pi = 2\pi f$

$f_{max} = \frac{1}{2} = 0.5$ Hz

Nyqist interval $= \frac{1}{2 f_{max}} = \frac{1}{2 \times 0.5} = 1$ Sec

Nyqist rate $= 2 f_{max} = 2 \times 0.5 = 1$ Hz