PROBLEM:

A signal composed of sinusoids is given by the equation

$$x(t) = 10\cos(800\pi t + \pi/4) + 7\cos(1200\pi t - \pi/3) - 3\cos(1600\pi t)$$

Determine the lowest sampling frequency $f_s = 1/T_s$ such that the signal $x(t)$ can theoretically be reconstructed exactly from its samples $x[n] = x(nT_s)$.