## Problem 3.8

(a) $f_{0}=\operatorname{gcd}(100,250)=50 \mathrm{~Hz}$
$\mathrm{N}=5$, Complex amplitudes: $a_{-5}=a_{5}=5, a_{2}=10 e^{j\left(\frac{\pi}{4}\right)}$ and $a_{-2}=10 e^{-j\left(\frac{\pi}{4}\right)}, a_{0}=10$
(b) The signal is periodic as the frequencies are harmonic. Fundamental Period $T_{0}=1 / f_{0}=0.02 \mathrm{~s}$
(c) Plot of spectrum of signal versus $f$ in Hz :


