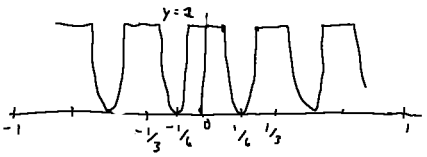
a) $T_g = 1/3$



b) $\frac{(1/2 + 0 + 1/4)}{3} = \frac{1}{4}$

$G[0] = 1 - F[0]$ $G[1,2] = 0$

$f_2(t) = \sum F[k] e^{j2\pi kt}$

$f(t - 1/4) = \sum F[k] e^{j2\pi k(t - 1/4)} = \sum F[k] e^{-2\pi k/4} e^{j2\pi kt}$

$m = 3k$

$= \sum F[\frac{m}{3}] e^{-2\pi m/4} e^{j2\pi mt}$

$G[m] = F[\frac{m}{3}] e^{-j2\pi m/12} e^{j2\pi mt}$

$G[3] = -F[1] e^{-j\pi/2}$ $\quad -f_{new} = -f(t)$

$G[3] = jF[1]$

$G[4,5] = 0$

$G[6] = F[2]$

$G[7,8] = 0$

$G[9] = -jF[3]$

$G[10,11] = 0$

$G[12] = -F[4]$

$G[13,14] = 0$

$G[15] = jF[5]$