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In[303]:=
Nr := 12
N1 := 11
I1 := 7

T := 1 / (Nr + I1)
ω := 2 * π / T
f := 1 / T

t0 := 0
t1 := T / 4
t2 := T / 2
t3 := 3 * T / 4
t4 := T

f1 := (Nr + I1) * (t - t0) + 11
f2 := 0
f3 := (N1 + I1)
f4 := N1 * Sin[2 * π * (2 * (Nr + I1)) * t + π / I1]

y := f1 * UnitStep[Mod[t, T] - t0] * (1 - UnitStep[Mod[t, T] - t1]) +
    f2 * UnitStep[Mod[t, T] - t1] * (1 - UnitStep[Mod[t, T] - t2]) +
    f3 * UnitStep[Mod[t, T] - t2] * (1 - UnitStep[Mod[t, T] - t3]) +
    f4 * UnitStep[Mod[t, T] - t3] * (1 - UnitStep[Mod[t, T] - t4])

Plot[y, {t, 0, 2 * T}, PlotStyle -> {RGBColor[.8, 0, 0], Thickness[.005]}]

c1 := 2 * f * ∫t0t1 f1 * e(-i * k * ω * t) dt
c2 := 2 * f * ∫t1t2 f2 * e(-i * k * ω * t) dt
c3 := 2 * f * ∫t2t3 f3 * e(-i * k * ω * t) dt
c4 := 2 * f * ∫t3t4 f4 * e(-i * k * ω * t) dt
c := c1 + c2 + c3 + c4

faza := Arg[c]
modul := Abs[c]

mh := 50
k := Table[k, {k, 0, mh}]

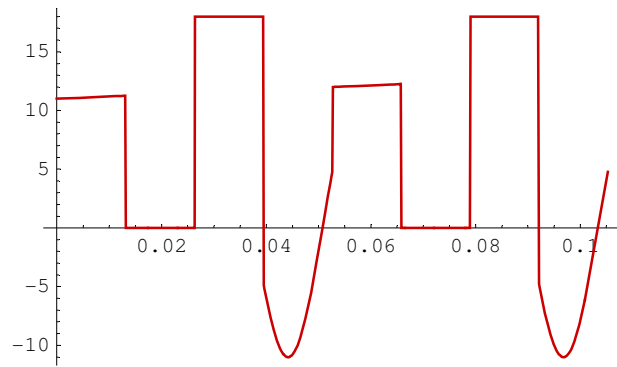
q := Transpose[{k, modul}]
ListPlot[q, PlotStyle -> {RGBColor[0, .5, 1], PointSize[0.02]}]
q := Transpose[{k, faza}]
ListPlot[q, PlotStyle -> {RGBColor[1, .5, 0], PointSize[0.02]}]

Lih := mh - 1

s = 0.5 * modul[[1]] + ∑i=2Lih modul[[i]] * Cos[k[[i]] * ω * t + faza[[i]]];

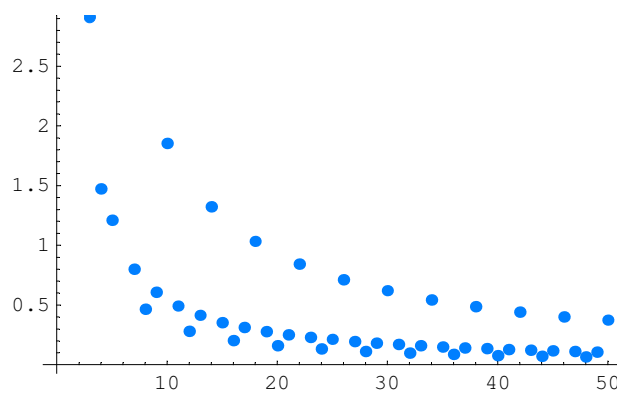
Plot[{y, s}, {t, 0, T}, PlotStyle -> {{RGBColor[.8, .8, .8]}, {RGBColor[0, .4, 0]}}]

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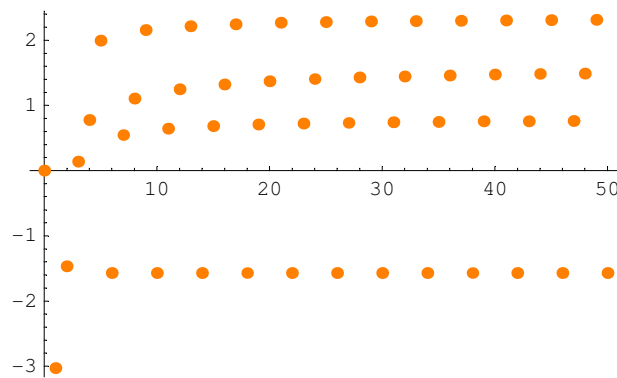
Out[319]=

Graphics -



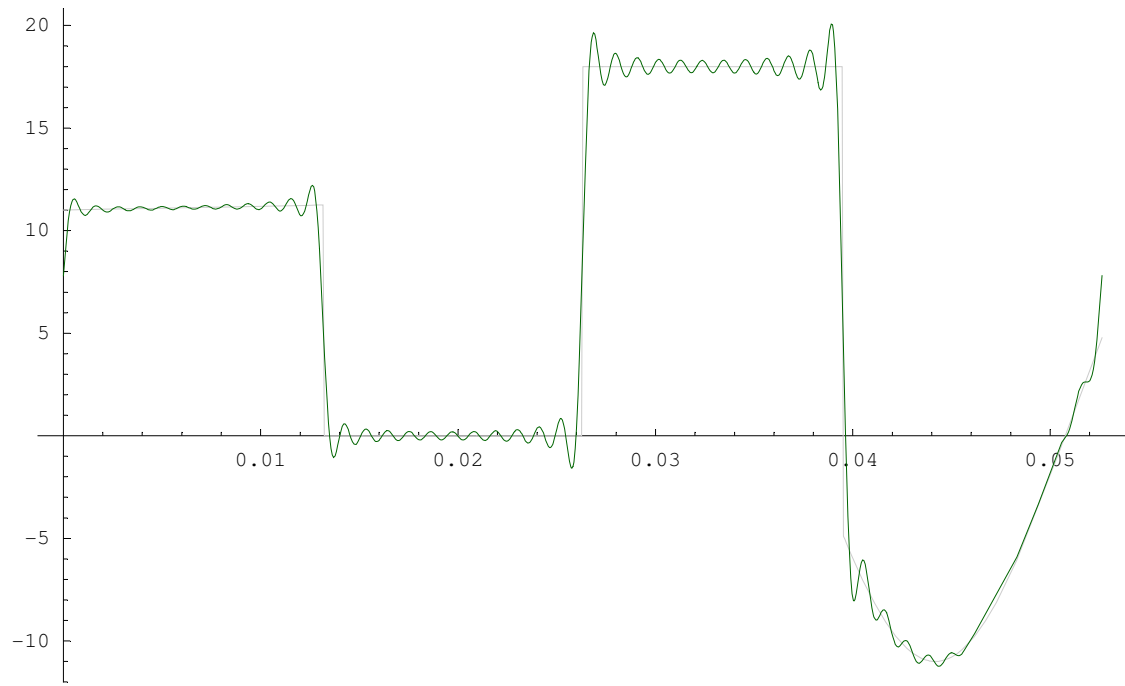
Out[330]=

Graphics -



Out[332]=

Graphics -



Out [335]=

▪ Graphics ▪