Homework 5

Spectrum

R.A.J. WACANNO (11741163)

		$b_0 =$	$9.00 \cdot 10^{-7}$
$a_1 =$	$7.50 \cdot 10^{-2}$	$b_1 =$	$-2.93 \cdot 10^{-7}$
$a_2 =$	$2.50 \cdot 10^{-2}$	$b_2 =$	$2.50 \cdot 10^{-2}$
$a_3 =$	$1.25 \cdot 10^{-1}$	$b_3 =$	$2.50 \cdot 10^{-2}$
$a_4 =$	-3.48	$b_4 =$	$1.37 \cdot 10^{-7}$
$a_5 =$	$1.10 \cdot 10^{-1}$	$b_5 =$	$5.00 \cdot 10^{-2}$

```
selectObject: "Sound homework5"

Copy: "homework5_edit"

duration = Get total duration
f0 = 1 / duration

for k from 0 to 5
    selectObject: "Sound homework5_edit"

    # Calculate a_k
    Copy: "a_" + string$(k)
    Formula: ~ self*sin(2*pi*k*f0*x)
    b[k] = Get mean: 1, 0, 0

    selectObject: "Sound homework5_edit"

    # Calculate b_k
    Copy: "b_" + string$(k)
    Formula: ~ self*cos(2*pi*k*f0*x)
    b[k] = Get mean: 1, 0, 0

    appendInfoLine: k, ") a = ", a[k], "; b = ", b[k]

    selectObject: "Sound homework5_edit"
    Formula: ~ self - a[k]*sin(2*pi*k*f0*x) - b[k]*cos(2*pi*k*f0*x)
endfor

# Reconstruct wave

selectObject: "Sound homework5"
Copy: "homework5_recon"
Formula: ~0

for k from 0 to 5
    Formula: ~ self + a[k]*sin(2*pi*k*f0*x) + b[k]*cos(2*pi*k*f0*x)
endfor
```