**ΘΕΩΡΙΑ ΣΗΜΑΤΩΝ & ΣΥΣΤΗΜΑΤΩΝ**

**ΠΛΑΤΗΣ ΕΥΑΓΓΕΛΟΣ**

**ΑΜ:2229**

**ΑΣΚΗΣΗ 1**

***k = m= = 3***

x (t)= (t cos(3πt)\*u(-3π-t))+(t\*sin(πt)\*u(t - π))+(cos(πt)\*sin(3πt)\*(u(t+3π)-u(t-π)))

x1 = 3 – x(t) / 1= 3-x(t)

x2 = 2 \*x(3t)

x3 = x(t - π) / 3



**ΑΣΚΗΣΗ 2**

***k = m= = 3***

**1o Ζεύγος**

x1(t)= u(t+2)-u(t-1)

Στήριγμα x1: [-2,1] A graph of a line

AI-generated content may be incorrect.

y1(t)= (t+1) , (t>=-3 & t<1);

Στήριγμα y1: [-3,1)

A graph of a line graph

AI-generated content may be incorrect.

Συνέλιξη στο [-5,2]

Περιοχή t ϵ [-5,-2]:

A graph of a function

AI-generated content may be incorrect.

Περιοχή t ϵ [-2,-1]:

A graph of a function

AI-generated content may be incorrect.

Περιοχή t ϵ [-1,2]:

A graph of a rectangular object with a red line

AI-generated content may be incorrect.

z1(t)=

A graph of a function

AI-generated content may be incorrect.

**2o Ζεύγος**

x2(t)= t \* u(t+3)

Στήριγμα x2: [-3,∞)

A graph of a function

AI-generated content may be incorrect.

y2(t)= e^(-3\*t) \* u(t-1)

Στήριγμα y2: [1, ∞)

A graph of a function

AI-generated content may be incorrect.

Συνέλιξη στο [-2, ∞)

Περιοχή t ϵ [-2, ∞):

A graph of a function

AI-generated content may be incorrect.

z2(t)=

A graph of a function

AI-generated content may be incorrect.

**3o Ζεύγος**

x3(t)= e^((-1)\*t) \* (u(t+1) - u(t))

Στήριγμα x3: [-3,0)

A graph of a function

AI-generated content may be incorrect.

y3(t)= u(t)

Στήριγμα y3: [0, ∞)

**A graph of a function

AI-generated content may be incorrect.**

Συνέλιξη στο [-3, ∞)

Περιοχή t ϵ [-3,0]:



Περιοχή t ϵ [0, ∞):

A graph of a function

AI-generated content may be incorrect.

z3(t)=

A graph with a line and numbers

AI-generated content may be incorrect.

**4o Ζεύγος**

x4(t)= sin(t)

Στήριγμα x4: [-∞,∞)

A graph of a function

AI-generated content may be incorrect.

y4(t)= e^(-3t)

Στήριγμα y4: [-∞, ∞)

A graph of a function

AI-generated content may be incorrect.

Συνέλιξη στο [-∞, ∞)

A graph with a line graph

AI-generated content may be incorrect.

**5o Ζεύγος**

x5(t)= 3(t >= -π & t < π)

Στήριγμα x5: [-π,π)

A graph of a function

AI-generated content may be incorrect.

y5(t)= cos(3t)

Στήριγμα y5: (-∞, ∞)

A graph of a function

AI-generated content may be incorrect.

A graph with a red and green line

AI-generated content may be incorrect.

z5(t)= 0

A graph with a line in the center

AI-generated content may be incorrect.