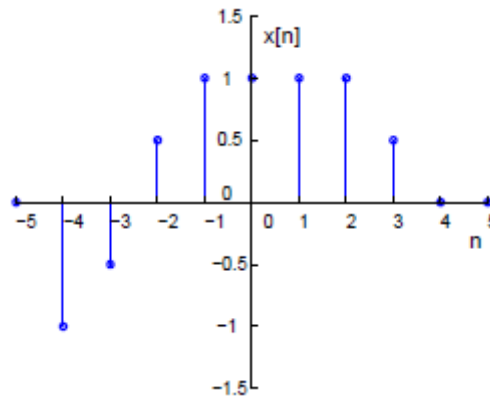


Homework N°03

Name:.....

Exercise 01:

Consider the discrete signal $x[n]$ represented below.



Plot the following signals.

- a) $x[n - 4]$
b) $x[3 - n]$
c) $x[3n]$
d) $x[3n + 1]$

This image shows a full page of white paper with horizontal dotted lines, typical of primary school writing paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

Exercise 02:

Calculate the Fourier transforms of the following discrete signals :

a- $x(n) = u(n) - u(n - 6)$

b- $x(n) = 2^n u(-n)$

This image shows a full page of white paper with horizontal dotted lines, typical of primary school handwriting practice paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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Which of the following systems are linear?

a) $y_1(t) = |\sin(3t)|x(t)$

$$\text{b) } y_2(t) = a \frac{dx}{dt}$$

c) $y_3(t) = |x(t)|$

d) $y_4(t) = \sin(x(t))$

[illegible]