

SIE 3015 - Linear Systems

Voluntary Assignment 1 Discrete systems, z -transformation

Handed out: August 29th
Tutoring: September 5th and 12th
Hand in by: September 13th at 12.00 in dedicated locker, building B

Exercise 1. z -transformations

(a) Determine the z -transformation of the signal given by

$$x(t) = \begin{cases} t, & t \geq 0 \\ 0, & t < 0 \end{cases}$$

(b) Determine the z -transformation of the signal given by

$$x(t) = \begin{cases} 3e^{-0.5t} \sin(4\pi t), & t \geq 0 \\ 0, & t < 0 \end{cases}$$

Exercise 2. More z -transformations

Do the following problems from the book:

- (a) B-2-9
- (b) B-2-10
- (c) B-2-12
- (d) B-2-16
- (e) B-3-9
- (f) B-3-12
- (g) B-3-13
- (h) B-3-16
- (i) B-3-17