**Lab #5**

**Objectives**

* Z-transform, Z+-transform, and reverse Z-transform

**Report**

1. Your report must include your answers in hand-written or computer-aid tools (word, latex).
2. Do not share your report with your friends.
3. Finally, you upload your report to BKeL on time.

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**EXERCISES**

**Exercise 1**. Use Z-transform to find impulse response h(n) of the system represented by the following input-ouput description equation.

**Exercise 2.** Use Z and Z-1 transform to compute the convolution

1. and
2. and
3. and

**Exercise 3.** Find all possible x(n) that has Z-1 transform as follows



**Exercise 4.** Given LTI system by the following input-ouput description equation

1. Draw the block diagram of the above system
2. Determine h(n)
3. Determine y(n) when x(n) = u(n)

**Exercise 5.** Given LTI system by the following input-ouput description equation

1. Draw the block diagram of the above system
2. Determine the impulse response h(n)
3. Determine yzi(n) when
4. Determine yzs(n) when

**Exercise 6.** If . Then, prove the following statements:



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