

Laboratory Assignment 2 – part 3

Due date: All 3 parts – March 2 at 5 pm

(Grace period till the end of Spring break)

6. Time-Domain Tests for LTI System Properties

- (a)** Show that an LTI system is BIBO stable if and only if its impulse response $h[n]$ is 0 for all $n < 0$.
- (b)** Show that an LTI system is BIBO stable if its impulse response $h[n]$ is absolutely summable.
- (c)** Conversely, show that if $h[n]$ is not absolutely summable, the LTI system is not BIBO stable. (I.e., there is a bounded input signal $x[n]$ that will yield an unbounded output signal $y[n]$.)