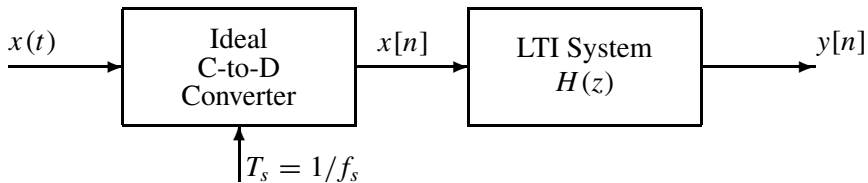


## PROBLEM:



The input to the C-to-D converter in the above system is

$$x(t) = 2 - 3 \cos(500\pi t + \pi/3)$$

The sampling frequency is  $f_s = 1000$  samples/second.

(a) Determine a system function  $H(z)$  for the LTI system such that  $y[n] = A$  for  $-\infty < n < \infty$ , where  $A$  is a constant.

(b) Determine the value of the constant  $A$  for your system in part (a).