Digital Control

HW3

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#1

Let $r = k + 2$, then

$$x(r) - 1.3x(r-1) + 0.4x(r-2) = u(r-2) \tag{1}$$

and the condition of system was

$$x(k) = 0, \quad for\ r = 0, 1 \tag{2}$$

$$u(r) = \begin{cases} 0, & r < 2 \\ 1, & r \geq 2 \end{cases} \tag{3}$$

```
clear;clc;close all
x = [0 0];
k2r = @(k) k+2;
for k = 0:100
    if k2r(k-2) >= 2
        u = 1;
    else
        u = 0;
    end
    x(k2r(k)+1) = 1.3*x(k2r(k-1)+1)-0.4*x(k2r(k-2)+1)+u;
end
plot(1:length(x)-2,x(3:end))
grid()
xlabel("k")
ylabel("x")
```