cosnx=T_n(cosx)

T(n+1)(x)=2T(n)(x)+T(n-1)(x)
T(n-1)(cosx)=cos((n-1)x)
T(n)(cosx)=cos(nx)
T(n+1)(cosx)=cos((n+1)x)

cos(x+y)=2cosxcosy-cos(x-y)
cos((n+1)x)=cos(xn+x)=2cosxcosxn+cos(xn-x)=2cosxcosxn+cos(x(n-1))
T(n+1)(x)=2T(n)(x)+T(n-1)(x)
cos((n+1)x)=2cosxcosn2+cos((n-1)x

cos((n+1)x)=T(n+1)(x)

U(n-1)(cosx)=sinnx/sinx

Un+1(x) = 2xUn(x) − Un−1(x)
U(n+1)(cosx)=sin((2+n)x)/sinx
Un(cosx)=sin((1+n)x)/sinx
U(n-1)(cosx)=sinxn/sinx
Un+1(x) = 2xUn(x) − U(n−1)(x)
sin((2+n)x)/sinx=2sinx*sin((n+1)x)/sinx-sinnx/sinx=(2sin(nx+x)sinx-sinnx)/sinx
sin(2x+nx)=2sin(nx+x)sinx-sinnx
sin(2x+nx)+sinnx=2*sin((2x+2nx)/2)*sin(2x/2)=2*sin(x(n+1))*sinx