

```
P = [1,0.7,0,0,0
      0,0,0.5,0,0
      0,0.3,0,0.6,0
      0,0,0.5,0,0
      0,0,0,0.4,1]
```

```
%oppg1
```

```
k = [2,3,4,50,100];%inndata
```

```
M = cell(length(k),1);%tom cell for å lagre matrisene
```

```
x0 = [0;0;0;1;0]%x0 matrise
```

```
for i = k
```

```
    sprintf('P^%.0f *x0 = ', i)
```

```
    Pi = P^i*x0;%renger ut sannsynligheten for å komme fra
```

```
x0
```

```
    disp(Pi)
```

```
    M{i} = Pi;%lagrer sannsynlighetene
```

```
end
```

```
for i = k
```

```
    sprintf('P(S_4 -> S_2)= %.10f, when k = %.f', M{i}(2),
```

```
i)%printer S_4 -> S_2 verdier for alle k
```

```
end
```

```
%2
```

```
%mellomregninger for oppg 2
```

```
n = length(P);
```

```
I5 = eye(5);
```

```
null5 = zeros(n, 1);
```

```
PI = P - I5
```

```
rrPI = rref(PI-null5)
```

```
% Oblig1
```

```
%
```

```
% P =
```

```
%
```

```
%      1.0000      0.7000          0          0          0
```

```
%          0          0      0.5000          0          0
```

```
%          0      0.3000          0      0.6000          0
```

```
%          0          0      0.5000          0          0
```

```
%          0          0          0      0.4000      1.0000
```

```
%
```

```

%%
% x0 =
%%
%      0
%      0
%      0
%      1
%      0
%%
%
% ans =
%%
%      'P^2 *x0 = '
%%
%      0
%      0.3000
%      0
%      0.3000
%      0.4000
%%
%
% ans =
%%
%      'P^3 *x0 = '
%%
%      0.2100
%      0
%      0.2700
%      0
%      0.5200
%%
%
% ans =
%%
%      'P^4 *x0 = '
%%
%      0.2100
%      0.1350
%      0
%      0.1350
%      0.5200
%%
%
% ans =

```

```

%
%      'P^50 *x0 = '
%
%      0.3818
%      0.0000
%      0
%      0.0000
%      0.6182
%
%
% ans =
%
%      'P^100 *x0 = '
%
%      0.3818
%      0.0000
%      0
%      0.0000
%      0.6182
%
%
% ans =
%
%      'P(S_4 -> S_2)= 0.3000000000, when k = 2'
%
%
% ans =
%
%      'P(S_4 -> S_2)= 0.0000000000, when k = 3'
%
%
% ans =
%
%      'P(S_4 -> S_2)= 0.1350000000, when k = 4'
%
%
% ans =
%
%      'P(S_4 -> S_2)= 0.0000000014, when k = 50'
%
%
% ans =
%
%      'P(S_4 -> S_2)= 0.0000000000, when k = 100'

```

```

%
%
% PI =
%
%      0      0.7000      0      0      0
%      0     -1.0000      0.5000      0      0
%      0      0.3000     -1.0000      0.6000      0
%      0          0      0.5000     -1.0000      0
%      0          0          0      0.4000      0
%
%
% rrPI =
%
%      0      1      0      0      0
%      0      0      1      0      0
%      0      0      0      1      0
%      0      0      0      0      0
%      0      0      0      0      0
%
%
```