```
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^{.0}f *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 \rightarrow S 2 verdier for alle k
end
응2
%mellomregninger for oppg 2
n = length(P);
I5 = eye(5);
null5 = zeros(n, 1);
PI = P - I5
rrPI = rref(PI-null5)
% Oblig1
9
% P =
응
응
      1.0000
                 0.7000
                                 0
                                            0
                                                       0
응
           0
                      0
                            0.5000
                                            0
                                                       0
                                       0.6000
9
            0
                 0.3000
                                  0
                                                       0
                            0.5000
응
            0
                       0
                                            0
                                                        0
응
                                       0.4000
            ()
                       ()
                                  ()
                                                  1.0000
응
```

```
응
% x0 =
응
용 0
응
     0
응
     0
9
     1
  0
응
% ans =
9
P^2 \times P^2 = 
응
     0
응
% 0.3000
응
% 0.3000
용
    0.4000
엉
9
% ans =
9
P^3 \times 0 = 1
엉
% 0.2100
% 0.2700
9
% 0.5200
엉
응
% ans =
9
^{\circ} ^{\prime} P^4 *x0 = '
응
응
    0.2100
응
    0.1350
응
% 0.1350
응
    0.5200
9
9
% ans =
```

```
'P^50 *x0 = '
9
응
     0.3818
응
응
     0.0000
%
응
     0.0000
     0.6182
응
% ans =
9
   'P^100 *x0 = '
응
9
9
     0.3818
응
     0.0000
9
% 0.0000
9
     0.6182
응
%
% ans =
      P(S_4 \rightarrow S_2) = 0.3000000000, \text{ when } k = 2'
00
% ans =
9
     'P(S 4 \rightarrow S 2) = 0.0000000000, when k = 3'
%
응
9
% ans =
     'P(S 4 \rightarrow S 2) = 0.1350000000, \text{ when } k = 4'
9
% ans =
      'P(S 4 -> S 2) = 0.0000000014, when k = 50
응
9
9
% ans =
응
      'P(S 4 -> S 2) = 0.0000000000, when k = 100'
```

```
9
90
% PI =

      0
      0.7000
      0
      0

      0
      -1.0000
      0.5000
      0

      0
      0.3000
      -1.0000
      0.6000

                                                                                 0
                                                                                   0
                                                                                   0
                          0
                                        0.5000 -1.0000
                  0
                                                                                   0
                                                        0.4000
                  0
                              0
                                         0
                                                                                  0
엉
% rrPI =
9
9
           0
                    1
                               0
                                       0
                                                  0
9
           0
                    0
                               1
                                         0
                                                   0
90
           0
                     0
                               0
                                         1
                                                   0
90
           0
                                         0
                     0
                               0
                                                   0
응
           0
                     0
                             0
                                         0
                                                   0
9
```