```
function x = Sol_DiffEq(A,x)

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
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%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% This function determines the solution of the difference equation
% x sub k+1 = A*(x sub k)
% Input arguments: matrix A and initial probability vector x
% Output argument: the limit x sub k as k goes to infinity

n = length(x);
y = zeros(n,1);
tol = 10^(-8);
max_k = 10000;
k = 0;
while abs(norm(x-y))>tol & k<max_k
 % write your code here to perform the difference equation in the while loop
 y = x;
 x = A*x;
end

end
```