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% Problem 2a
% power_method function
% Input: Matrix A, initial guess x and tolerance
% Output: largest eigen value and its eigen vector
function [eval, evec] = power_method(A,x,tol)

diff = tol;
eval = 0;
while diff >= tol
    xnew = A*x;
    eval_new = norm(xnew,inf)/norm(x,inf);
    diff = abs(eval-eval_new);
    eval = eval_new;
    x = xnew;
end
evec = x/norm(x);
end
```

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