```
N = 120;
p = [12, 24, 48, 70, 100, 120];
trials = 10e5;

for n = 1:length(p)
    patternMatrix = rand(p(n), N);
    patternMatrix(patternMatrix>0.5) = 1;
    patternMatrix(patternMatrix<=0.5) = -1;
    errors = 0;
    pErrors = zeros(6,1);

    for k = 1:trials
        m = randi(N);
        nu = randi(p(n));

        x = patternMatrix(nu, :);
        W = 1/N * (patternMatrix') * patternMatrix;
        % W(1:1+size(W,1):end) = 0;  % Sets the diagonal weights to zero
        b = W(m,:) * x';
        if b == 0
            sUpdated = 1;
        else
            sUpdated = sign(b);
        end

        if sUpdated ~= x(m)
            errors = errors + 1;
        end
    end

    disp("P_error_" + p(n) + ": " + errors / trials)

end
```