

```

function simulador()
    % Gera os dados X_i
    for i = 1:3
        N{i} = [];
        X{i} = [];
        for j = 1:500
            r = rand;
            if r > 0.5
                X{i} = [X{i} -1];
            else
                X{i} = [X{i} 1];
            endif
            N{i} = [N{i} j];
        endfor
    endfor

    % Calcula os S_i
    for i = 1:3
        soma = 0;
        S{i} = [];
        for j = 1:500
            soma = soma + X{i}(j);
            S{i} = [S{i} soma];
        endfor
    endfor

    % Calcula os Y_i
    for i = 1:3
        Y{i} = [];
        for j = 1:500
            Y{i} = [Y{i} S{i}(j)/j];
        endfor
    endfor

    % Calcula os Y_i
    for i = 1:3
        Z{i} = [X{i}(1)];
        for j = 2:500
            somaParcial = X{i}(j-1) + X{i}(j);
            Z{i} = [Z{i} somaParcial/2];
        endfor
    endfor

    % Imprime os gráficos
    figure
    for i = 1:3
        subplot(3,3,i)
        plot(N{i}, S{i}, 'k');
        xlabel("n");
        ylabel("Sn");
        title('Gráfico para Sn')
    endfor

    for i = 1:3
        subplot(3,3,i+3)
        plot(N{i}, Y{i}, 'k');
        xlabel("n");
        ylabel("Yn");
        title('Gráfico para Yn')
    endfor

    for i = 1:3
        subplot(3,3,i+6)
        plot(N{i}, Z{i}, 'k');
        xlabel("n");
        ylabel("Zn");
        title('Gráfico para Zn')
    endfor
endfunction

```

