

```

% (d) MSE
MSE_sample(a) = mean(abs(x_c-y_c).^2);
fprintf("MSE for T = %.2f is %e\n", samp_T(a), MSE_sample(a))
% (e) Quantize
if a == 1
    figure(3)
    for b = 1:3
        q = Quantize(b);
        x_q = round((x_n+1)/2*(2^q+1));
        x_q(x_q > 2^q) = 2^q;
        x_q(x_q < 1) = 1;
        x_q = x_q/(2^q+1)*2-1;
        subplot(3,1,b)
        stem(x_q)
        axis([0,length(x_q)-1,-1,1])
        title(['bits = ',num2str(Quantize(b))])
        xlabel('n')
        ylabel('x_q[n]')
        MSE_quantize(b) = mean(abs(x_q-x_n).^2);
    end
end
% (f) MSE
fprintf("MSE for %d levels is %e\n", 2^Quantize(b), MSE_quantize(b))
end
end

```