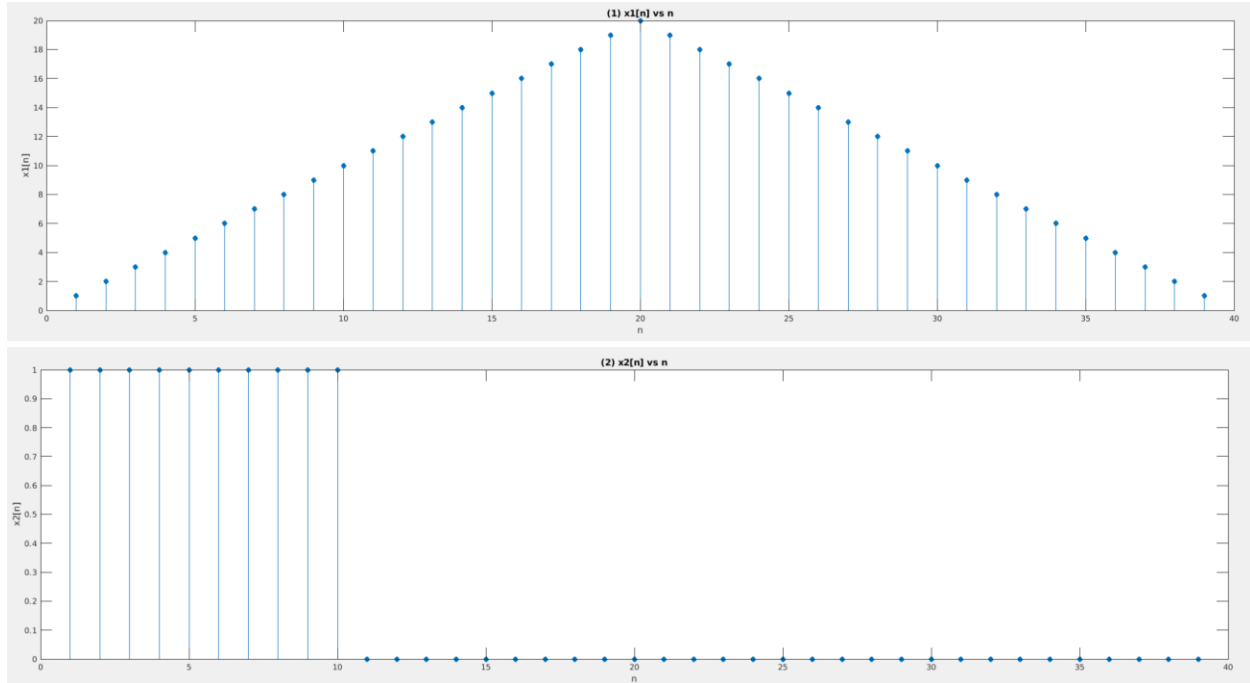


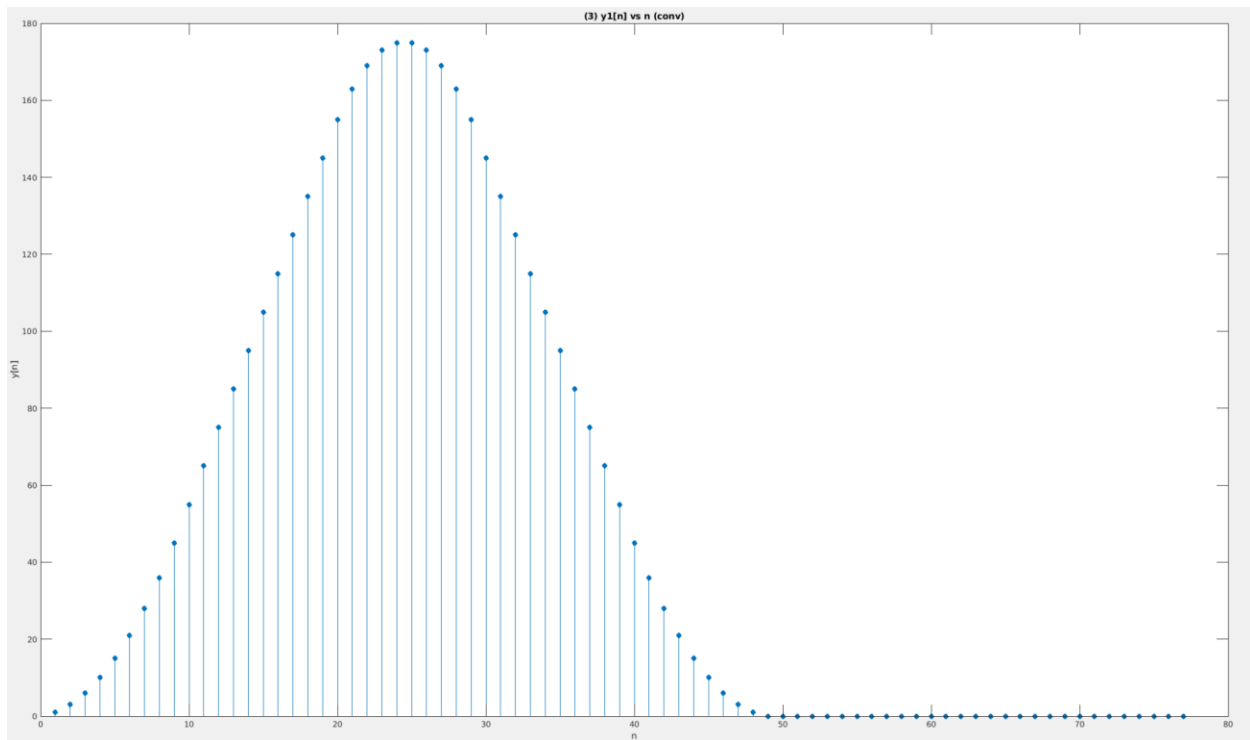
# Signals and Systems MATLAB HW1

B11901164 陳秉緯

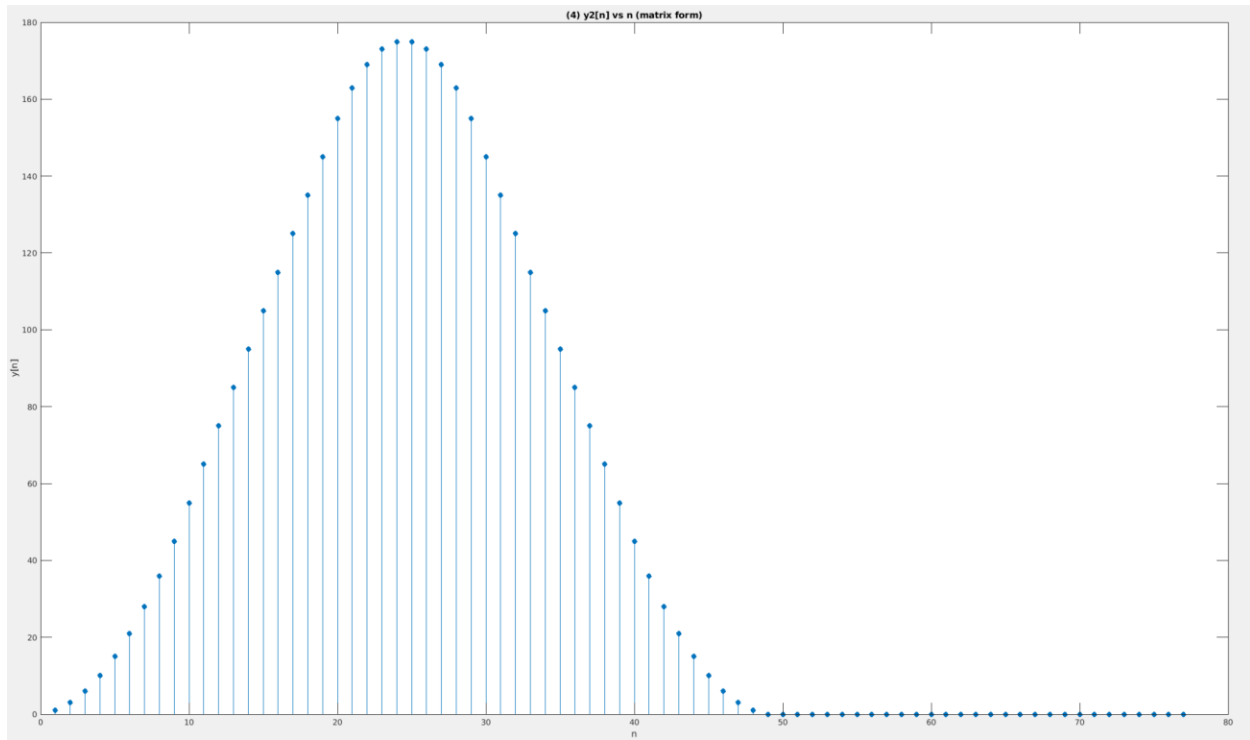
(a)



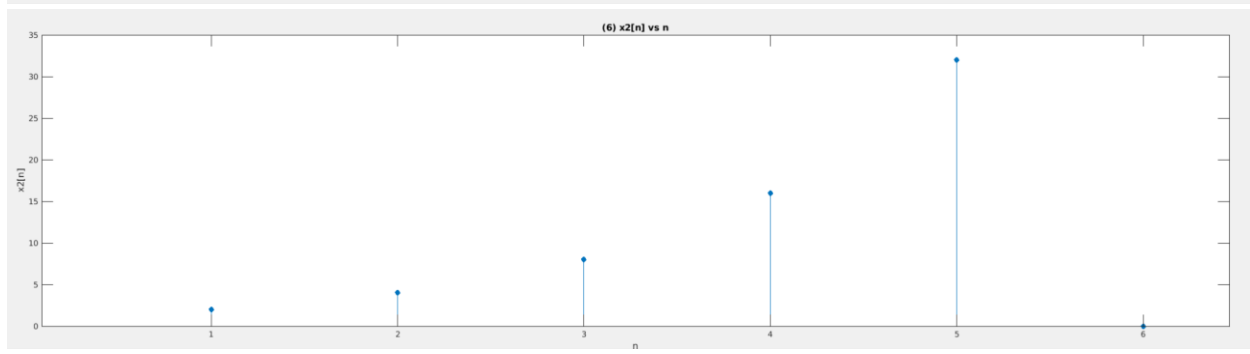
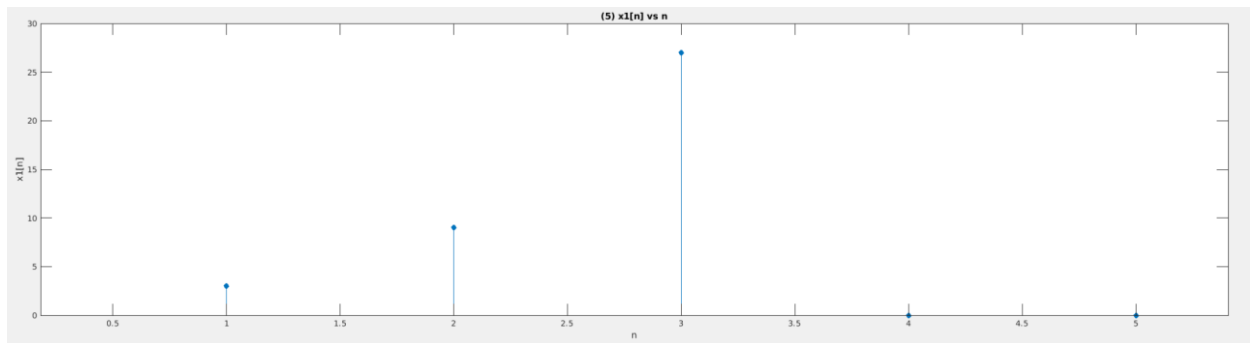
(b)

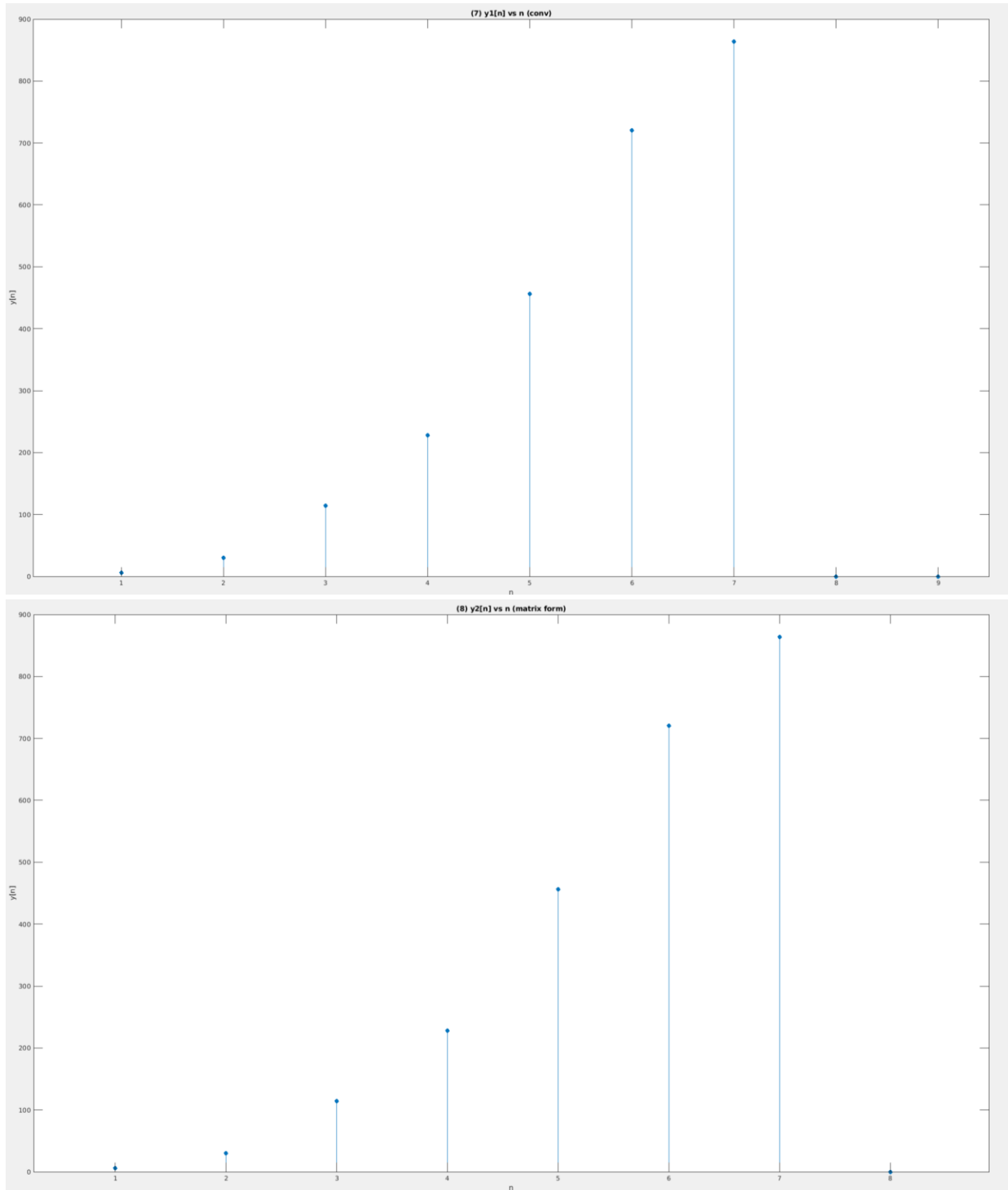


(c)



(d)





Code from Part (C)

```

% (c) Computing the convolution using matrix form
N1 = length(x1);
N2 = length(x2);
conv_matrix = zeros(N1 + N2 - 1, N1);
for k = 1:N1
    conv_matrix(:, k) = [zeros(k-1, 1); x1'; zeros(N1 - k, 1)];
end

y_matrix = conv_matrix * x2';

% Plot
figure;
stem(1:length(y_matrix), y_matrix, 'filled');
xlabel('n');
ylabel('y[n]');
title('(4) y2[n] vs n (matrix form)');

```