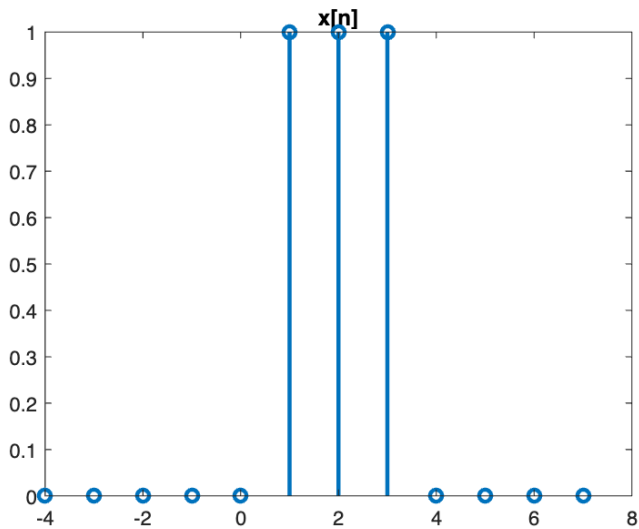


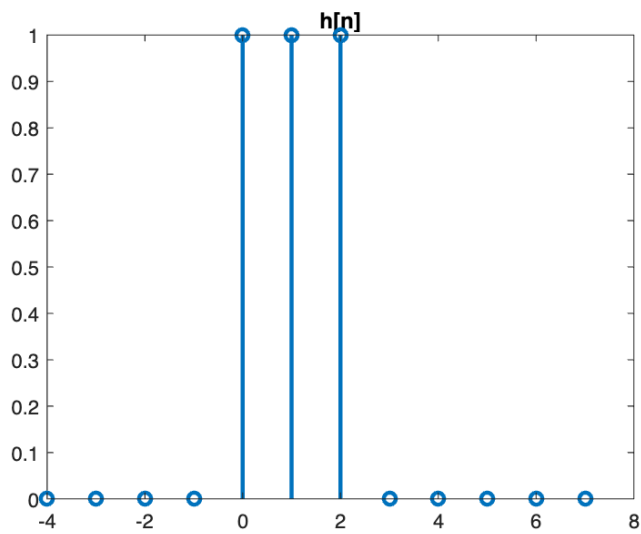
Question 1

```
close all;
clear;
clc;
x = [];
c = 1;
for t = -4:7
    if t >= 1 && t <= 3
        x(c) = 1;
        c = c+1;
    else
        x(c) = 0;
        c = c+1;
    end
end
t = -4:7;
stem(t, x, 'Linewidth', 2);
title("x[n]");
```



```
clear c;
c = 1;
h = [];
for t = -4:7
    if t >= 0 && t <= 2
        h(c) = 1;
        c = c+1;
    else
        h(c) = 0;
        c = c+1;
    end
end
```

```
t = -4:7;
stem(t, h, 'Linewidth', 2);
title("h[n]");
```



```
clear c;
c = 1;
h1 = [];
for t = -4:7
    if t >= 1 && t <= 3
        h1(c) = 1;
        c = c+1;
    else
        h1(c) = 0;
        c = c+1;
    end
end
```

```
clear c;
c = 1;
h2 = [];
for t = -4:7
    if t >= 2 && t <= 4
        h2(c) = 1;
        c = c+1;
    else
        h2(c) = 0;
        c = c+1;
    end
end
```

```
clear c;
```

```

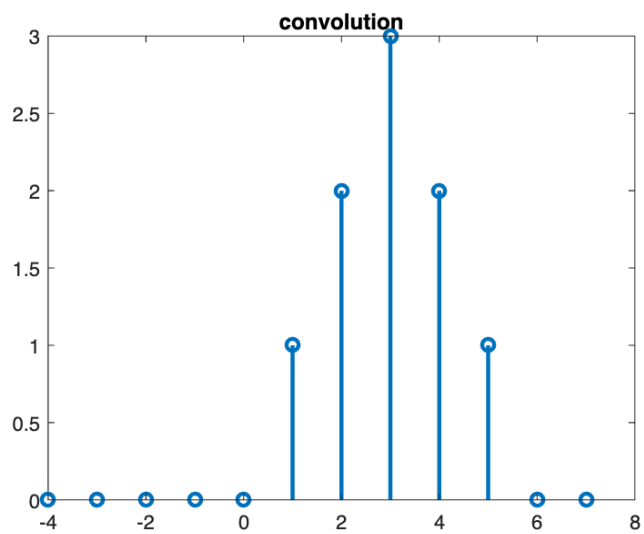
c = 1;
h3 = [];
for t = -4:7
    if t >= 3 && t <= 5
        h3(c) = 1;
        c = c+1;
    else
        h3(c) = 0;
        c = c+1;
    end
end

```

```

t = -4:7;
stem(t, h1 + h2 + h3, 'Linewidth', 2);
title("convolution");

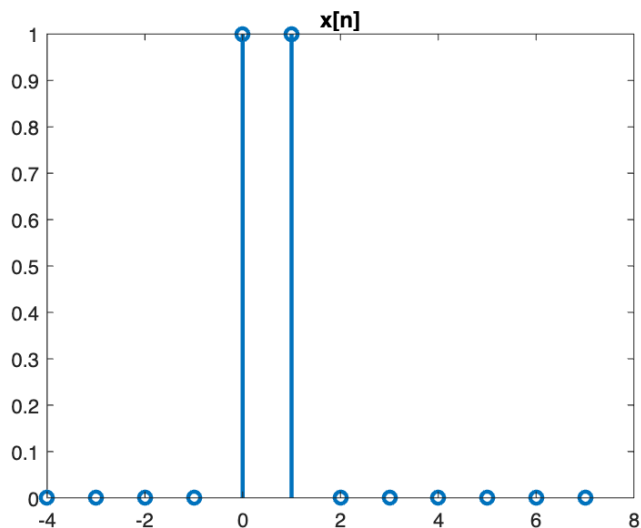
```



Question 2

```
close all;
clear;
clc;

x = [];
c = 1;
for t = -4:7
    if t==0 || t==1
        x(c) = 1;
        c = c+1;
    else
        x(c) = 0;
        c = c+1;
    end
end
t = -4:7;
stem(t, x, 'Linewidth', 2);
title("x[n]");
```

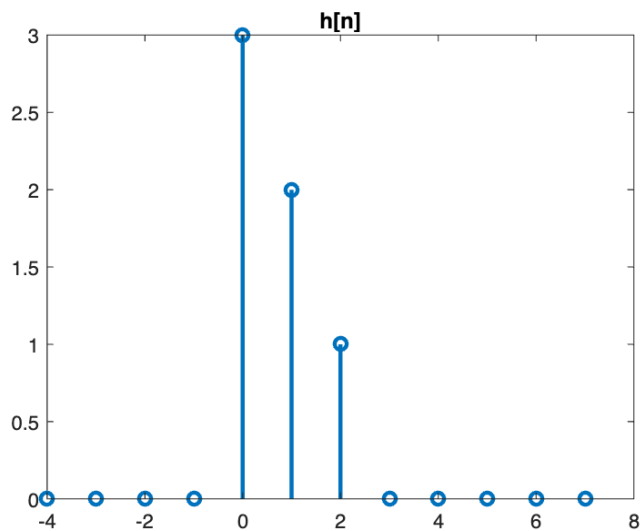


```
clear c;
c = 1;
val = 3;
h = [];
for t = -4:7
    if t>=0 && t<=2
        h(c) = val;
        c = c+1;
        val = val - 1;
    else
        h(c) = 0;
    end
end
```

```

        c = c+1;
    end
end
t = -4:7;
stem(t, h, 'Linewidth', 2);
title("h[n]");

```



```

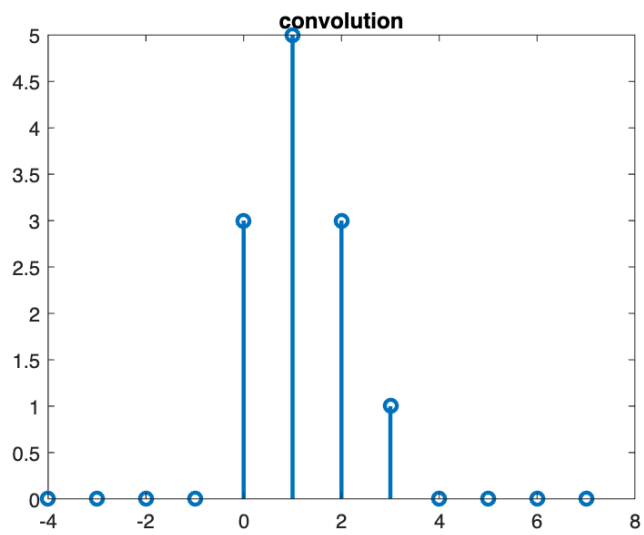
clear c;
val = 3;
c = 1;
h1 = [];
for t = -4:7
    if t>=1 && t<=3
        h1(c) = val;
        val = val - 1;
        c = c+1;
    else
        h1(c) = 0;
        c = c+1;
    end
end
end

```

```

t = -4:7;
stem(t, h + h1, 'Linewidth', 2);
title("convolution");

```

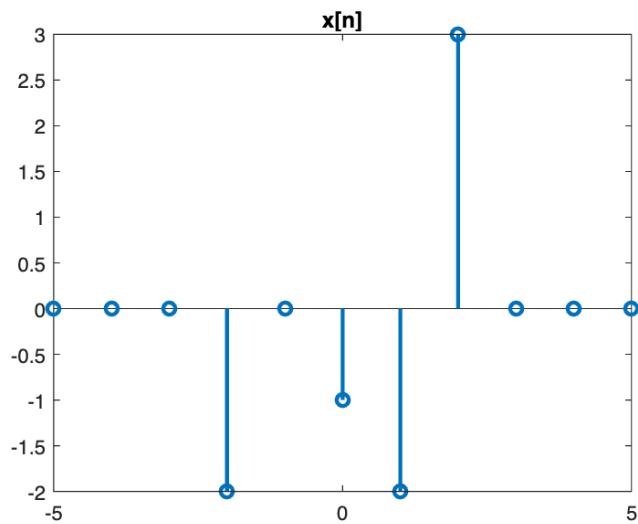


Question 3

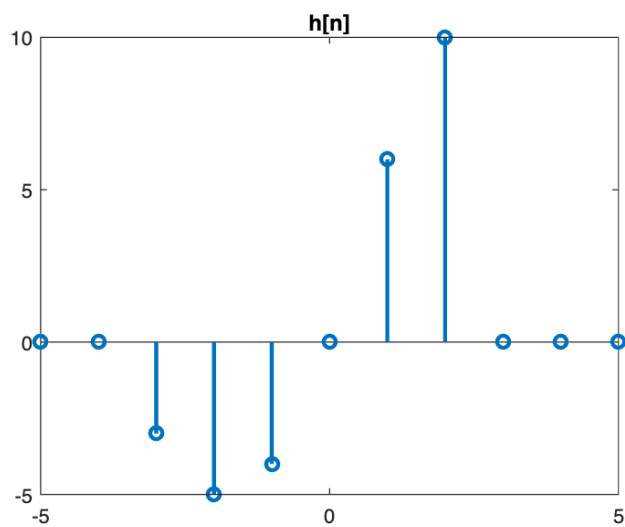
```
close all;
clear;
clc;
x = [];
h = [];
c = 1;

for n = -5:5
    if n == -3
        h(c) = -3;
        x(c) = 0;
        c = c+1;
    elseif n == -2
        h(c) = -5;
        x(c) = -2;
        c = c+1;
    elseif n == -1
        h(c) = -4;
        x(c) = 0;
        c = c+1;
    elseif n == 0
        h(c) = 0;
        x(c) = -1;
        c = c+1;
    elseif n == 1
        h(c) = 6;
        x(c) = -2;
        c = c+1;
    elseif n == 2
        h(c) = 10;
        x(c) = 3;
        c = c+1;
    else
        h(c) = 0;
        x(c) = 0;
        c = c+1;
    end
end

n = -5:5;
stem(n, x, 'LineWidth', 2);
title("x[n]");
```



```
stem(n, h, 'LineWidth', 2);
title("h[n]");
```



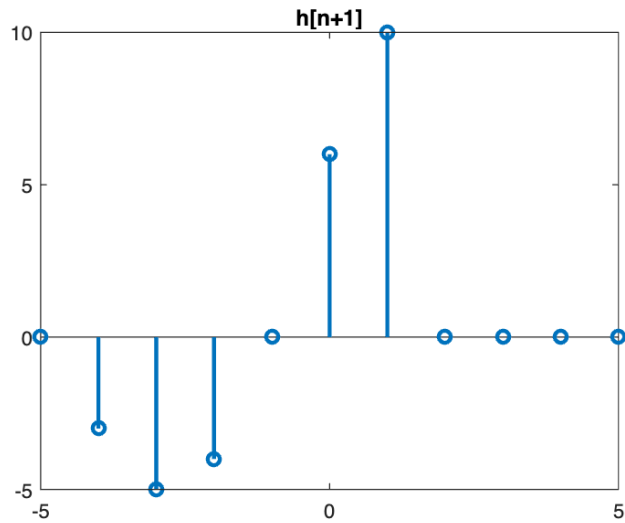
```
clear c
h1p = [];
c = 1;
for n = -5:5
    if n == -4
        h1p(c) = -3;
        c = c+1;
    elseif n == -3
        h1p(c) = -5;
        c = c+1;
    elseif n == -2
        h1p(c) = -4;
```



```

        c = c+1;
elseif n == -1
    h1p(c) = 0;
    c = c+1;
elseif n == 0
    h1p(c) = 6;
    c = c+1;
elseif n == 1
    h1p(c) = 10;
    c = c+1;
else
    h1p(c) = 0;
    c = c+1;
end
end
n = -5:5;
stem(n, h1p, 'LineWidth', 2);
title("h[n+1]");

```



```

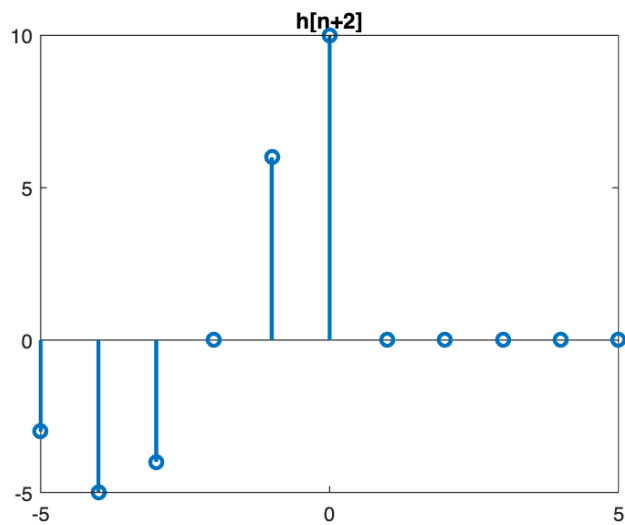
clear c
h2p = [];
c = 1;
for n = -5:5
    if n == -5
        h2p(c) = -3;
        c = c+1;
    elseif n == -4
        h2p(c) = -5;
        c = c+1;
    elseif n == -3
        h2p(c) = -4;
        c = c+1;
    elseif n == -2

```

```

        h2p(c) = 0;
        c = c+1;
    elseif n == -1
        h2p(c) = 6;
        c = c+1;
    elseif n == 0
        h2p(c) = 10;
        c = c+1;
    else
        h2p(c) = 0;
        c = c+1;
    end
end
n = -5:5;
stem(n, h2p, 'LineWidth', 2);
title("h[n+2]");

```



```

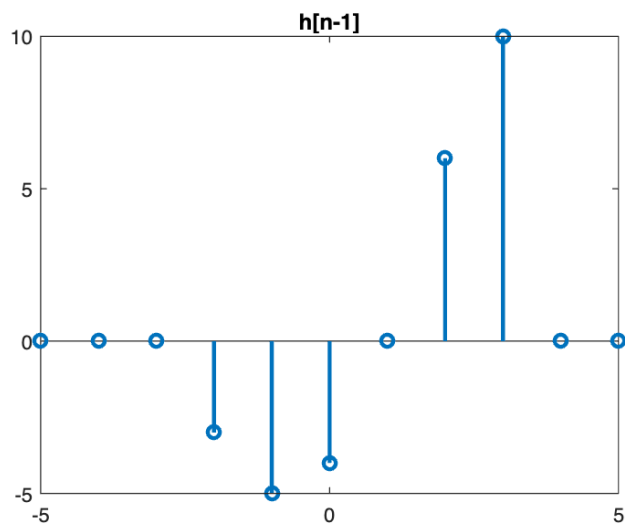
clear c
h1m = [];
c = 1;
for n = -5:5
    if n == -2
        h1m(c) = -3;
        c = c+1;
    elseif n == -1
        h1m(c) = -5;
        c = c+1;
    elseif n == 0
        h1m(c) = -4;
        c = c+1;
    elseif n == 1
        h1m(c) = 0;
        c = c+1;
    end
end

```

```

elseif n == 2
    h1m(c) = 6;
    c = c+1;
elseif n == 3
    h1m(c) = 10;
    c = c+1;
else
    h1m(c) = 0;
    c = c+1;
end
end
n = -5:5;
stem(n, h1m, 'LineWidth', 2);
title("h[n-1]");

```



```

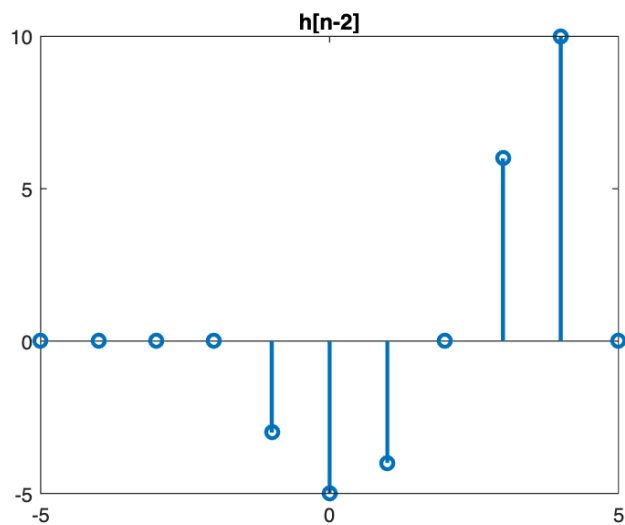
clear c
h2m = [];
c = 1;
for n = -5:5
    if n == -1
        h2m(c) = -3;
        c = c+1;
    elseif n == 0
        h2m(c) = -5;
        c = c+1;
    elseif n == 1
        h2m(c) = -4;
        c = c+1;
    elseif n == 2
        h2m(c) = 0;
        c = c+1;
    elseif n == 3
        h2m(c) = 6;

```

```

        c = c+1;
elseif n == 4
    h2m(c) = 10;
    c = c+1;
else
    h2m(c) = 0;
    c = c+1;
end
end
n = -5:5;
stem(n, h2m, 'LineWidth', 2);
title("h[n-2]");

```



```

y = x(1).*h2p + x(2).*h1p + x(3).*h + x(4).*h1m + x(5).*h2m;
stem(n, y, 'LineWidth', 2);
title("Convolution");

```

