```
h3 = num2cell(hadamard(8));
for i=1:8
    for j=1:8
        if h3{i,j} == 1
            h3{i,j} = 0;
        elseif h3{i,j} == -1
            h3{i,j} = 1;
        end
    end
end
h3;

% problem 1
% received = num2cell([ 0 1 1 1 1 1 0 0 ])

% problem 2
received = num2cell([0 1 0 0 0 1 1 1]);

for i = 1:8
    disp(i-1)
    same = 0;
    diff = 0;
    for j=1:8
        if h3{i,j} == received{1,j}
            same = same + 1;
        else
            diff = diff + 1;
        end
    end
    z = (same - diff) / 8
end
```

```
     0
z = 0
     1
z = 0.5000
     2
z = 0
     3
z = 0.5000
     4
z = 0.5000
     5
z = 0
     6
z = -0.5000
     7
z = 0
```

```
% problem 3
h4 = num2cell(hadamard(16));
for i=1:16
    for j=1:16
        if j < 9
            h4{i,j} = "na";
        else
```

```
            if h4{i,j} == 1
                h4{i,j} = 0;
            elseif h4{i,j} == -1
                h4{i,j} = 1;
            end
        end
    end
end

% problem 4
received = num2cell([1 1 1 1 0 1 1 1]);
for i = 1:16
    disp(i-1)
    same = 0;
    diff = 0;
    for j=9:16
        if h4{i,j} == received{1,j-8}
            same = same + 1;
        else
            diff = diff + 1;
        end
    end
    z = (same - diff) / 8
end
```

```
     0
z = -0.7500
     1
z = 0.2500
     2
z = 0.2500
     3
z = 0.2500
     4
z = -0.2500
     5
z = -0.2500
     6
z = -0.2500
     7
z = -0.2500
     8
z = 0.7500
     9
z = -0.2500
    10
z = -0.2500
    11
z = -0.2500
    12
z = 0.2500
    13
z = 0.2500
    14
z = 0.2500
    15
z = 0.2500
```