Aufgabe 1

```
% formel fuer
% mantissenlaenge t = 3
% Exponenten p aus {-2,...,2}
% Basis b = 2

t = 3;
b = 2;
p = -2:2;

results = [];

% jedes p_i aus p
for p_i = p
    % jedes i aus allen moeglichkeiten 2^t
    for i = 0:2.^t-1
        bit_row = (dec2bin(i,t)-'0').';
        % mantisse berechnen
        mantisse = 0;
        for bit_idx = 1:t
             mantisse = mantisse + bit_row(bit_idx)*b.^(-bit_idx);
        end
        % mit exponenten verrechnen
        x = mantisse * b^(p_i);
        results = [results;x];
    end
end

% remove duplicates and sort
results = unique(sort(results),'rows');
results
size(results,1)
```

```
results =

         0
    0.0312
    0.0625
    0.0938
    0.1250
    0.1562
    0.1875
    0.2188
    0.2500
    0.3125
    0.3750
    0.4375
    0.5000
    0.6250
    0.7500
```

```
    0.8750
    1.0000
    1.2500
    1.5000
    1.7500
    2.0000
    2.5000
    3.0000
    3.5000


ans =

    24
```

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