* Problem 1.
  + Exercise 7.2:  
    approximation pyramid:   
    prediction residual pyramid:
    - level 0:
    - level 1:
    - level 0 to level 2:
  + Exercise 7.3:  
    All the levels are expansions except the 0th one, and the expansion ratio is bounded by 4/3.

|  |  |
| --- | --- |
| J | Expansion ratio |
| 0 |  |
| 1 |  |
| 2 |  |
| J+1 |  |
| ∞ |  |

* + Exercise 7.15:  
    While j0=1,
* Problem 2.

|  |
| --- |
| (level 1) |
| (level 2) |
| Reconstruction by level 2 with error rate 212.8 |
| Reconstruction by level 2 with error rate 61.4 |

\*note: I used DFT to transform the approximation and detail of the wavelet transformation, and then extract the peaks in those DFTs for removing the high frequency components. As a result, the error rate is reduced because the high frequency noise had been dropped out from the wavelets while reconstruction.

* Problem 3.
  + (a) Choose the threshold with the most complete edges and the least details in the inner part of the image.  
    
* Problem 4.
  + >>getCorner(house.tif, ncorners=50);  
    