

## Exercises on change of basis; image compression

**Problem 31.1:** Verify that the vectors of the Haar wavelet basis, given in lecture, are orthogonal. Adjust their lengths so that the resulting basis vectors are orthonormal.

**Problem 31.2:** We can think of the set of all two by two matrices with real valued entries as a vector space. Describe two different bases for this space. Is one of your bases better than the other for describing diagonal matrices? What about triangular matrices? Symmetric matrices?

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