Prob 7

After we have gone through $m$ levels, the transforms have $2^m$ samples each, total no of levels is

$$2^m = N$$

$$\text{or } m = \log_2 N$$

thus the no. of coefficients we have to calculate in the whole calculation is $\log_2 N$ levles times $N$ coeff. each or $N \log_2 N$ coefficients in all.