INFERENCES:

1. Using alternate zeros property of HBF, we can reduce the time for convolution by half.
2. Using symmetry for even non-zero values of HBF, this time can be further reduced.
3. In decimation, since we drop alternate values, we need not compute them in the first place.
4. Also, we trim first (h-1)/2 and last (h-1)/2 values. Hence computing mid values of convolution is enough (the function decim_with_all_props() uses all these properties).
5. If the decimation output of input signal X, is feeded to interpolation, interpolation output will be almost the same as the convolution output of X and HBF, scaled by a factor of 0.5. To be precise, alternate values will be exactly equal to 0.5 times X*H, whereas others will be almost same as those of X*H. This difference is due to some information loss after downsampling.