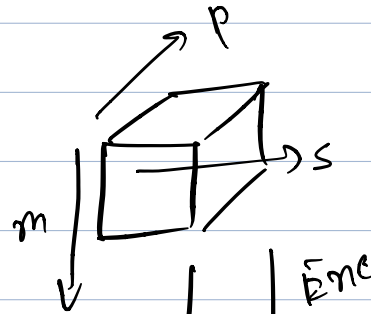


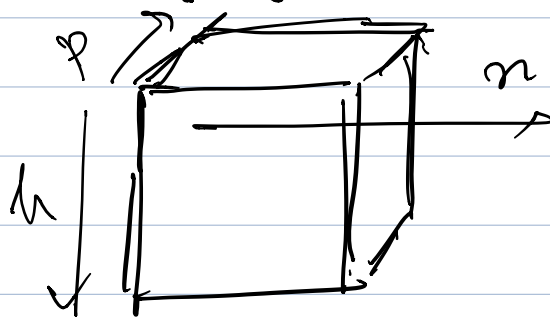
$N = pms$  - circuit size

Soundness -  $2^{-\lambda}$

Proof size :

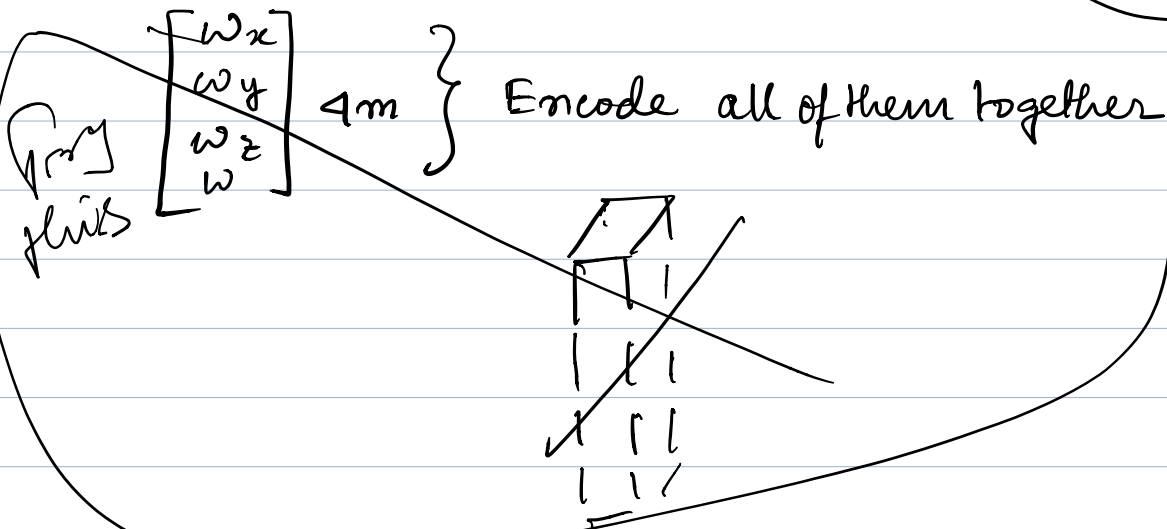


Verifier's time :



Prover's time :

Oracle formation:



Proof Size:  $4l + 3(s+l) + t \cdot 3p$   
 $+ t \cdot 3p$   
 $2l + t \cdot 3p + 3pt$

Inner product:  $8t (2 \log m + 2)$

(Groth inner product)

Total =  $16t \log m + 20t + 9l + 3s + 12tp$

Verifier's Time:

$O(N) + 8t$

$\underline{A} \underline{w} = \underline{x} \underline{w} \underline{x}$

$\underline{[A I - I]} \underline{\begin{bmatrix} w \\ w_0 \end{bmatrix}} = 0$

$A w = b$

check optimization  
of combining of Lincheck

$O(N) + 4t \cdot \text{mult\_exp}(2m) + 4t \cdot \text{mult\_exp}(m)$

Prover's Complexity:

Encoding time:  $4pm(FFT(l) + FFT(n))$   
 $+ 4pn(FFT(m) + FFT(h))$

Committing time:  $pl \cdot \text{mult\_exp}(m) +$   
 $p(n-l) \cdot \text{mult\_exp}(\min(l, m))$

Subprotocol:  $8tm \exp$

$t \leftarrow$