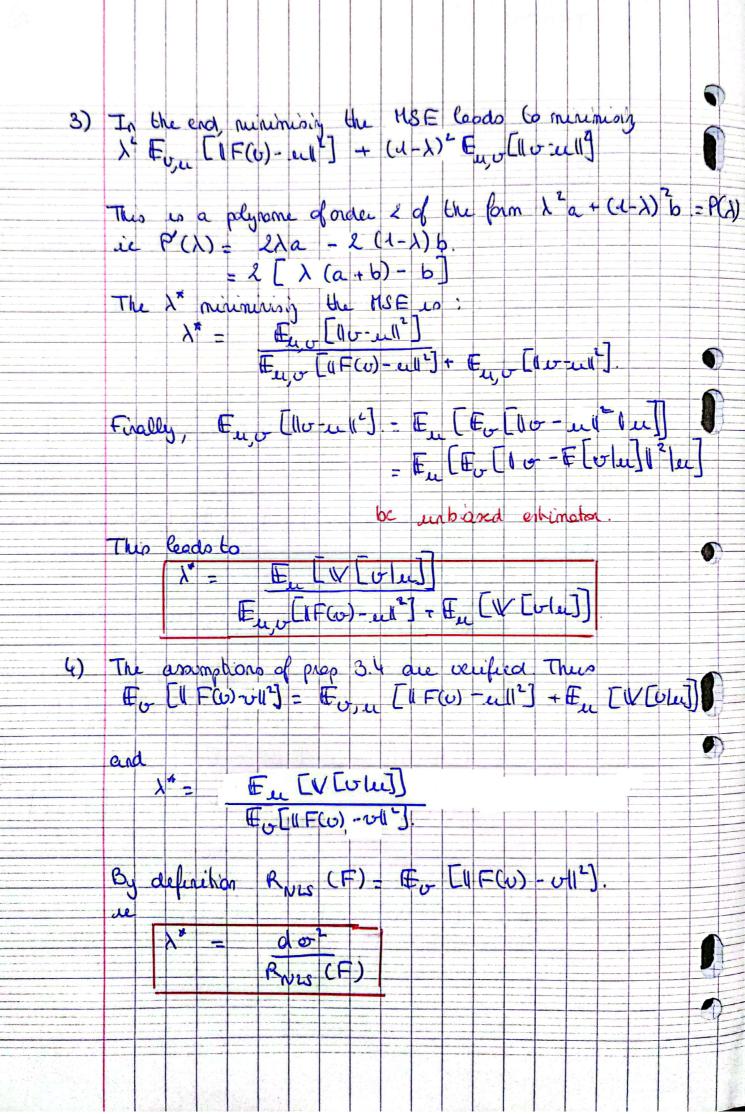
le 20111 IHDEN Homework & Exercise 3.1. 4) We have For [15°(0)-211 ]= FILINF(0)+ (1-1) 0 -411] = For (11) (F(0)-11) + (1-2) (v-11) 11] = 1 Ev [ [1 F(v) -ull ] + (1-2) E[1 vall ] + 2)(4-x) [ (F(v)-u10-u)] 2) We also have Eva [(F(v)- u 10 -u)] = Eu [Ev [(F(v)-u 10 22) hu] E, [ (F(v)-u | v -u) | u] =  $\sum_{\alpha} \mathbb{E}_{\sigma_{\alpha}, \nu_{\overline{\alpha}}} \left[ \langle F(\nu)_{\alpha} - u_{\alpha} | u_{\alpha} - \nu_{\alpha} \rangle | u_{\alpha} \right]$  a pich and For, va [ < F(v) - uz | uz - va > | u] = El Eva [ (F(v) - un luz - v2) lu, v2 ] lu] - Eo [ < F(v)2 - u2 | u2 - Ev2[v2 lu, v2-]> lu] = Eon[<F(o)n-un I un - Eon[valu]>lu] Ev, u [(F(v)-u) vu)]=0



Exercis 3.4: let v be the raisy version of u and it (v) an estimator of er. We have € [ 1 û(v) - € , [û(v) [e1] 1 1 [e1] = Fo [ lû(v) - u - Fo [û(v) lu] + ull [u] = E. [ 1 û (v) - ul lu] + E. [ ( E. (a(v) | u] -u ( ) | u] doesn't depend on v. - € [ 2 < û(v) - u | E (û(v) u) - u ) lu] = Fr [11û (v) -u112 | u] + 11 Fo ( û(v) [ m] - u 112 2 ( F [û (v) | u] - u | F ( [û (v) | u] - u > 21 Er [û(v)tu] -ull = Ev [ (v) - en ] - 1 Ev [ û (v) 1 en] - el In the end E, Cheilo el - IE, Lie (v) he - ell2 + Eo Llie (o) - Fo Cei (o) I all le