tet xy be the mea Let I = {a, ... am }. Let H = 1 I a; Y,(ai) = 1 (uniform distribution) Let X; (a;) be a random variable assigned to a; with [X; (a;)] = H because the points one unformly distributed. X_ = { X1, X2, -, Xm3., XI = 1 \ X; And one wish to prove: E, [XI] = M. Then EI[XI] = m X EL [XI] = 1 (X1+X2+...+Xm) E_[X] = - X, + - X2+-..+ - Xm By linearity of expectation, regardless of Xi and X; are independent or dependent, we have $E_{Z}[X_{Z}] = E[\frac{1}{m}X_{1}] + \dots + E[\frac{1}{m}X_{m}]$ = - E[X1]+ -- + + E[Xm] = 1 H(1) +--+ 1 E H(m) = MH = H N 9;