Recap:

Average Linearity: E[aX+b] = a E[X] + b

E[x1+x2] = E[x1] +E[x2]

Standard deviation: a(X) = E[X-ux] = 0 ?

a(X) = E[|X-ux|] ?

Variance: Var[X1+X2] = Var[X1] + Var[X2] holds only if X1 and X2 are independent

Y1 = X^2 vs Y2 = X1X2

Assume X,X1,X2 are identical independently discrete

Sx = Sx1 = Sx2 = {0,2,4,6,8}

Y1 = 16 ==> X =4

Y2 = 16 ==> 4\*4 or 2\*8 or 8\*2

Var[X] = (l-k)(l-k+2)/12 > (l-k)^2/16

a[X] > (l-k)/4