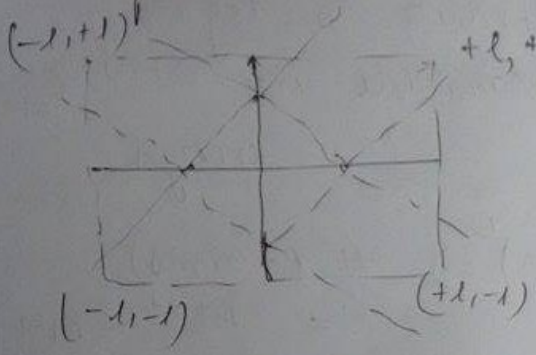
(06) Consider the following diagram of LASSO



This is in 2 dimension.

Now since l is very large, the LASSO occupies a point in the space, Thus in 2 dimensions probability that one of the dim is zero is $\frac{1}{2}$

Thus for M dimensions, the prob. that K of the dimensions are zero is

$$\frac{M!}{(M-K)!\,K!}\left(\frac{1}{M}\right)^{K}\left(1-\frac{1}{M}\right)^{M-K}$$

or $$\binom{M}{K}\left(\frac{1}{M}\right)^{K}\left(1-\frac{1}{M}\right)^{M-K}$$