Exercise 1

P(die = 2 , 4 , 6) = .1 + .2 + 0 = .3

P(normal\_die = 2,4,6) = 1/6 + 1/6 +1/6 = ½ = .5

The probability of I win is 0.3, it is even worse than normal die with equal probability.

b)

{3, 8, 9} is sets of values to be taken.

I[ 3= 8] = 0

I[8 = 8] = 1

I[9 = 8] = 0

E [ I[X = 8] ] = P3 \* 0 + p8 \* 1 + p9 \* 0

= p8

c)

H(X) =