

HW 19

ok to post

1) a) A dice has 6 sides. Roll twice

$$Pr(1) = 1/6 \cdot 1/6 \Rightarrow \underline{1/36}$$

b) $Pr(1)$ ten times

$$\underline{(1/6)^{10}}$$

c) $Pr(1)$ n times

$$(1/6)^n$$

$$2) \binom{n}{k} = \frac{n!}{k!(n-k)!} \rightarrow \frac{n(n-1)\dots(n-k+1)}{k!}$$

$$3) \binom{n}{k} p^k (1-p)^{n-k}$$

This chooses all possible subsets of k heads from n.

$$Pr(k; n, p) = Pr(X=k) \rightarrow \text{gets us to } \binom{n}{k} p^k (1-p)^{n-k}$$

4) We know that going from negative \mathcal{P} to positive ∞ will give us approximations which will level off to equaling 1.