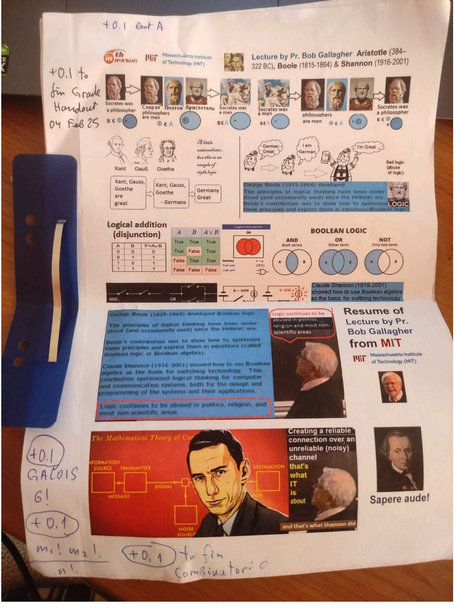
+0.1 Cont A

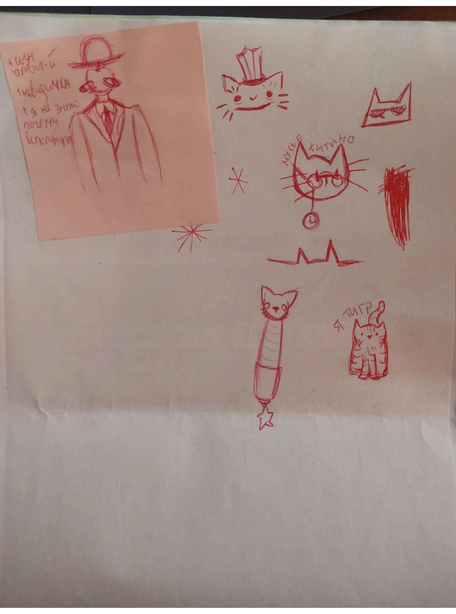
+0.1 to Jim Grade Handout 04 Feb 25

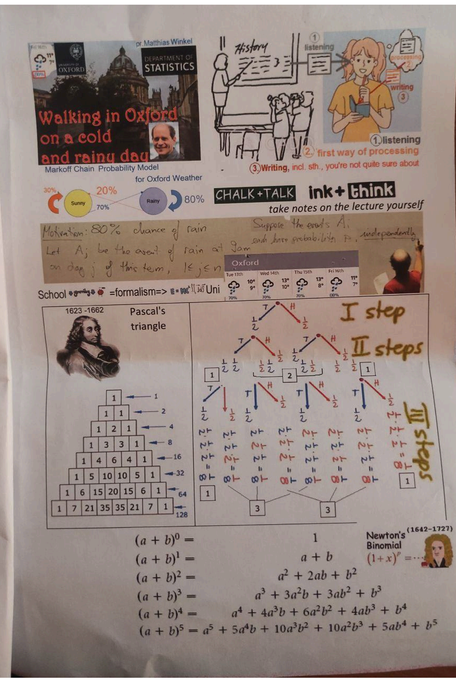


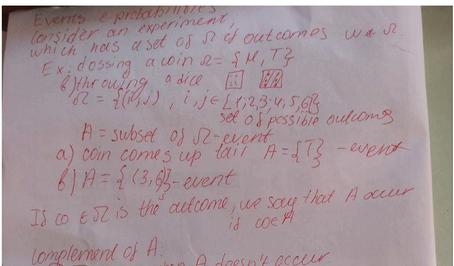
+0.1 GALOIS 6!

+0.1 $\frac{m!\,m_2!}{n!}$

+0.1 to fin Combinatorics







Events & probabilities,

Consider an experiment, which has a set of Ω of outcomes w a Ω

Ex. dossing a coin $\Omega = \{H, T\}$

b) throwing a dice $\Omega = \{1,2,3,4,5,6\}$

$\Omega = \{(i,j),\ i,j \in \{1,2,3,4,5,6\}\}$ set of possible outcomes

A = subset of Ω - event

a) coin comes up tail $A = \{T\}$ - event

b) $A = \{(3,6)\}$ - event

If $\omega \in \Omega$ is the outcome, we say that A occur if $\omega \in A$

Complement of A:

A^c A^c occur when A doesn't occur

Set difference $A \setminus B = A \cap B$

Intersection. $A \cap B$ occur if both A & B occur

$A \cup B$ occur if any A or B occur

A and B r disjoint if $A \cap B = \emptyset$

A and B cannot occur together

$A = \{T\}$ $B = \{(6,6)\}$

$P(A)$ of each event A

Case:

Ω is finite and all outcomes r equally likely

then $P(A) = \frac{|A|}{|\Omega|}$

a) coin $|\Omega| = 2$

$|A| = 1$ $P(A) = \frac{1}{2}$

b) $|\Omega| = 6$

$|A| = 1$

$P = \frac{1}{6}$

Elementary combinatorics:

A rearrangement of distinguishable objects

Suppose we have n dist-e objects