

Math 724, Fall 2013

Notation/LaTeX Reference Sheet (last update: 8/15/13)

Bogart's problem symbols

- Essential
- Motivational
- + Summary
- Especially interesting
- * Difficult
- Essential for this or the next section

LaTeX macros

```
\newcommand{\fallfac}[2]{\#1}^{\underline{\#2}}
\newcommand{\risefac}[2]{\#1}^{\overline{\#2}}
\newcommand{\qbin}[2]{\begin{bmatrix} \#1 \\ \#2 \end{bmatrix}_q}
\DeclareMathOperator{\Fix}{Fix}
```

Notation list

Symbol	Meaning	LaTeX	Reference
$[n]$	The set $\{1, 2, \dots, n\}$		
N^M	Functions $m \rightarrow N$		p.7
$n^{\underline{k}}$	Falling factorial	<code>\fallfac{n}{k}</code>	p.9
$\binom{n}{k}$	Binomial coefficient	<code>\binom{n}{k}</code>	p.13
χ_S	Characteristic function		p.16
C_n	Catalan number		p.24
K_n	Complete graph on n vertices		p.29
$R(m, n)$	Ramsey number		p.29
$G - e$	deletion		p.51
G/e	contraction		p.51
$n^{\overline{k}}$	Rising factorial	<code>\risefac{n}{k}</code>	p.62
$S(k, n)$	Stirling number of the second kind		p.65
$B(k)$	Bell number		p.66
$\binom{k}{j_1, \dots, j_n}$	Multinomial coefficient	<code>\binom{k}{j_1, \dots, j_n}</code>	p.67
$P(k)$	Number of partitions of k		p.70
$P(k, n)$	No. of part'ns of k into n parts		p.70
$Q(k, n)$	No. of part'ns of k into n distinct parts		p.76
Fruit symbols		I have no idea	p.81
$\begin{bmatrix} n \\ k \end{bmatrix}_q$	q -binomial coefficient	<code>\qbin{n}{k}</code>	p.92
S_n	Symmetric group on n letters		p.117
D_n	Dihedral group of order $2n$		p.119
C_n	Cyclic group of order n		p.125
Gx	Orbit of a group action		p.131
Gx_{multi}	Multiorbit of a group action	<code>Gx_{\text{trm}{multi}}</code>	p.132
$\text{Fix}(x)$	Subgroup fixing an element x	<code>\Fix(x)</code>	p.133

Typos/clarifications

p.100, top line: “number real number” should be “real number”

p.104, problem 228: A_3 should be C .

p.105, bottom paragraph: “If is also” should be “It is also”

p.107, problem 237: For the purpose of the problem, assume that every couple includes one man and one woman.