

Bibliography and author index

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	[end of subsection], xvi		surfaces], 235, 247
($-^1$)	[first derived complex], 217	\leq	[for patterns, patterned surfaces], 235, 247
($-^{\pm 1}$)	[inverse image], xvi	$+$	[sum of patterns, patterned surfaces], 233, 247
($-^n$)	[inverse word], 1	\rightarrow	[function], xvi
(${}^n(-)$)	[inverse path], 8	\mapsto	[function on elements], xvi
$ - $	[set $\times \{1, -1\}$], 1	\approx	[isomorphism], 3
$\ - \ $	[Cartesian power], xv	\equiv	[equivalence of patterns, patterned surfaces], 225, 246
$ - $	[column vectors], 149		235
	[cardinal], xv		[automorphism], 24, 28
	[modulus], 23, 202		[set of all functions], 47
	[norm of matrix], 202		[restriction], 47
	[norm of patterned surface], 248	\sim , ($-,-$)	[subgroup], xvi
	[norm of track], 234	$- -$	[partial order], 18, 47
	[polyhedron of simplicial complex], 216	$- \leqslant -$	[integer or ordinal interval], xv
$\langle - \rangle$	[map of polyhedrons] 217		[commutator], xvi
($-^*$)	[subgroup generated by], 2	$[-,-]$	[rank of free module], 204
$*_{ieI}$	[complement, set of complements], 47		[index of subgroup], 3
$- * -$	[dual edge], 52, 67, 125	$[-:-]$	[Boolean pairing], 47
$- \backslash -, - / -$	[dual module], 149	$(-:-)$	[pairing], 48
\subseteq, \subset	[units of field], 25	$- \square -$	[presentation], 2
$-$	[free product], 14	$\langle - , - \rangle$	$-$ [semidirect product], 30
\cup	[free product], 14	$\langle - - \rangle$	[domain of difference], 48
\vee	[special HNN extension], 14	$- \bowtie - , - \times -$	[tree interval], 30
\cap	[quotient set], 3	$- \nabla -$	[free product with amalgamation], 14
\otimes	[containment], xv	$- [-, -]$	[HNN extension], 14
\times, \prod	[complement], xv	$- * -$	[abelianization], 40
\oplus	[union], xv		[almost equal], 48
	[disjoint union], xv	$(-)^{ab}$	[inner derivation], 31
	[intersection], xv	$- =_a -$	[G -module], 107, 115
	[cap product], 146	ad	[automorphism group], 24
	[tensor product], xvi, 78	A - or $A[-]$	[set of almost G -stable functions], 108
	[Cartesian product], xv	Aut	
	[direct sum], xvi	$\mathcal{A}(G, A)$	
	[for patterns, patterned		

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\mathcal{B} -	[Boolean ring], 54, 55, 124, 126	$GL_-(\cdot)$	[general linear group], 21
$\bar{\mathcal{B}}$ -	[quotient Boolean ring], 125, 126	HCF	[upper half plane], 21
$\mathcal{B}_n X$,	55	$H^1(\cdot, \cdot)$	[highest common factor], xv
$\mathcal{B}_{fin} X$,	237	H_*	[first cohomology group], 107
$\mathcal{B}\alpha$,	242	H^*	[homology], 135, 136, 138, 218
$B(\cdot)$,	[boundaries], 141	i -	[cohomology], 107, 135, 136, 219
$B_n(K)$	[n -boundaries], 218	$Im(z)$	[initial vertex], 4, 5, 8
$B^n(K, G)$,	218	$Inn(\cdot, \cdot)$	[imaginary part of z], 21
b_v	234	j_p	[set of inner derivations], 107
C_m, C_∞	[cyclic group], 2	$k[-]$	[pattern map], 224
C -	[set of components], 29, 33	$k\langle - \rangle$	[polynomial ring], 27, 28
cd	[cohomological dimension], 110	$k[[\cdot]]$	[free algebra], 28
$(\mathcal{C}1), (\mathcal{C}2), (\mathcal{C}3)$,	247	$k((\cdot))$	[power series ring], 25
$C(K)$	[simplicial chain complex], 218	$M_n(\cdot)$	[Laurent series ring], 25
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$\partial/\partial x$	[partial derivative], 166	NM	[positive integers], xv
δ	[coboundary], 54	\circ	[normal surfaces], 249
δ_n	[coboundary map], 218	$(\cdot)^\circ$	[involution], 155, 156
$\hat{\partial}$	[boundary map], 29, 113	$\pi(-)$	[dual complex], 164
$\hat{\partial}_n$	[boundary map], 218	π_1	[opposite], 57
$\Delta -$	[diagonal], 42, 179	pd	[fundamental group], 13, 32, 36
$(\cdot)_d$	[G -set from derivation], 107	PD ,	[fundamental group], 220
$d(\cdot, \cdot)$	[distance], 25, 67	$PGL_-(\cdot)$	[projective dimension], 110
D_m, D_∞	[dihedral group], 2	$PSL_-(\cdot)$	<i>see</i> Poincaré duality in Subject index
$Der(\cdot, \cdot)$	[set of derivations], 107	$\mathcal{P}M$	[projective linear group], 21
$(\mathcal{D}1), (\mathcal{D}2)$,	261	\mathbb{Q}	[projective special linear group], 21
D_P	[dual graph], 225	$R-, R[-, \cdot]$	[patterned surfaces], 247
$(\cdot)^e$	[exponent 1, -1, *], 1, 8, 49, 125	\mathbb{R}	[rationals], xv
$\varepsilon(\cdot)$	[augmentation map], 29, 111, 115	\mathbb{R}^n	[group ring, G -module], 110
$\varepsilon^0(\cdot)$	[orientation map], 136, 156	$Re(z)$	[real numbers, Euclidean 1-space], xv
$e(\cdot)$	[number of ends], 126	S^1	[Euclidean n -space], xv
E -	[edge set, one-simplexes], 4, 223	S^2	[real part of z], 23
$E(\cdot), E_-$,	81	$(\mathcal{S}1), (\mathcal{S}2), (\mathcal{S}3)$, 255	[circle], 137
\mathcal{E} -	[space of ends], 124, 126	S^-	[sphere], 137
Ext,	142	S_n -	
\emptyset	[empty set], xv	$SL_-(\cdot)$	[set of n -simplexes], 215
f	[simplified surface map], 249	star(\cdot)	[special linear group], 21
F -	[two-simplexes], 224	size(\cdot)	[incident edges], 5
F_n	[free group], 2	Sym-	[size sequence], 92
FP	[finiteness property], 144, 155	τ -	[symmetric group], 3
${}^g(\cdot), (\cdot)^g$	[conjugation], 3	$(\cdot)^t$	[terminal vertex], 4, 5, 8
$G(\cdot)$	[graph of groups], 11	t_e	[transpose], 149
GD,	<i>see</i> geometric duality in Subject index	$T(E)$	[edge functions], 11
G_x	[orbit], 3		[connecting elements], 11
G_{x_1, \dots, x_n}, G_X	[stabilizer], 3		[tree for a tree set], 49

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Symbol index

$T(G(-), -, -)$	[standard graph of tree], 31	$X(G, S)$	[Cayley graph], 5
Tor	145	$X(m, n)$	[distance-transitive graph], 67
tr	[trace], 108, 202	\mathcal{X} -	[Boolean space], 124, 126
Tr	[Hattori–Stallings trace], 204	χ	[Euler characteristic], 37, 105
T_2	[2×2 lower triangular], 28	\bar{z}	[complex conjugate], 21
U_-	[group of units], 21	\mathbb{Z}	[integers], xv
V_-	[vertex set], 4, 215	\mathbb{Z}^+	[non-negative integers], xv, 224
$V(-), V_-$	[induced almost equality classes], 81	\mathbb{Z}_2	[$\{\{0, 1\}\}$], XVI
V_∞	[infinite stabilizer part], 90	$\mathbb{Z}V, \mathbb{Z}[V]$	[free abelian group], 28
$\tilde{V}T$	[almost equality class for T], 74	$Z(-)$	[cycles], 141
ω -	[augmentation kernel], 29, 111, 115	$Z_n(K)$	[n -cycles], 218
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