

Corrections and additions to
Polytopes, rings, and K-theory
W. Bruns and J. Gubeladze

If you should find a mistake in of our book, mathematical or typographical, please let us know by e-mail to

wbruns@uos.de

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p. 4, l. 10 $\alpha : V \rightarrow \mathbb{R}$

p. 10, 1.B, l. 1 set \rightarrow sets

p. 10, l. -1 A subset C

p. 13, l. -16 $C = H_{\lambda_1}^+ \cap \cdots \cap H_{\lambda_n}^+ \subset V$

p. 29, l. -19 $P'_n \rightarrow P_n$

same page, l. -11 Delete $P =$ from $P = \text{conv}(F, x)$.

p. 30, Thm. 1.54, l. 3 $\Gamma \rightarrow \Sigma$

same page, l. -8 $\mathbb{R}_+ D, D \in \Sigma'$

p. 31, l. 5 connected \rightarrow convex

p. 33, l. -10 $n = \#\text{vert}(\Pi)$

same page, l. -3 f is the support function of Π' .

p. 56, proof of 2.16(d) \implies (c), dimension $d \rightarrow$ dimension r

- p. 60, Theorem 2.29** Exchange p and q in the last sentence.
- p. 71, l. -1** $v \equiv \pm q$ (p) or $vq \equiv \pm 1$ (p)
- p. 86, Exerc. 2.17** add the hypothesis: P different from the unit simplex
- p. 139, l. -4** Corollary 2.35(b) \rightarrow Proposition 2.35(b)
- Chapter 4** The definition of *monomial ideal* was forgotten. It is an ideal in a monoid algebra $R[M]$ generated by elements of M .
- p. 137, Theorem 4.32** Replace $--$ in (b) and (c) by $-$
- p. 147, Class groups of monoid algebras, l. 2** monomial ideal in $R \rightarrow$ monomial ideal in $R[M]$
- p. 198, Notes to Ch. 5** The main source for Section 5.D is W. BRUNS AND J. GUBELADZE, Polytopal linear groups, *J. Algebra* **218** (1999), 715–737.
- p. 200, Theorem 6.1, l. 2** all maximal M -sequences in I
- p. 207, l. 1** $\varphi_m \rightarrow \varphi_{m+1}$
- p. 213, Example 6.27(a)** $\omega_R = X_1 \cdots X_m R$
- p. 214, l. -11** $*\text{Ext}_S^{n-d}(\omega', \omega_S) = R$
- same page, l. -10** $\omega' = *\text{Ext}_S^{n-d}(R, \omega_S)$
- same line** $(n-d)$ th total Betti number
- p. 180, l. -2** $y \in M \rightarrow y \in \bar{M}$
- p. 215, l. 1** $*\text{Ext}_R^d(\bar{\Gamma}, \omega_S) \rightarrow *\text{Ext}_R^d(\bar{\Gamma}, \omega')$
- same page, l. 4** $*\text{Ext}_R^d(\bar{\Gamma}, \omega_S) \rightarrow *\text{Ext}_S^d(\bar{\Gamma}, \omega')$
- p. 217, (6.7)** Replace $--$ by $-$
- p. 217, l. -14** insert space after “splits”
- p. 231, Theorem 6.53** In (a)(iii) $r = \text{rank } M$.
- p. 247, Exercise 6.11** Delete “normal” from the hypothesis.

p. 247, Exercise 6.15 replace d by r (the number of factors in the denominator of $F(t)$).

p. 316, 8.41, 1. 5 rank $d \rightarrow$ rank $\geq d$

p. 325, 1. -4 Lopez \rightarrow Logar

p. 346, 1. 4 suslin \rightarrow Suslin

p. 350, 1. -14 quillen \rightarrow Quillen

p. 393, 1. 17 totaro \rightarrow Totaro

p. 405, 1. -7 $dt \rightarrow dT$

p. 426, Exercise 10.5 Francisco Santos suggested the following fast construction of the “bordism” polytope \tilde{P} . Let $Q \subset \mathbb{R}^n$ be any support polytope for a projective unimodular triangulation \mathcal{F} of the fan $\mathcal{N}(P)$. Then the polytope

$$\tilde{P} = \text{conv}((P, 0), (Q, 1)) \subset \mathbb{R}^{n+1}$$

has all the properties mentioned in the exercise. In fact, one wants that the vertices of \tilde{P} , corresponding to the vertices of Q , are simple (and, hence, unimodular). But if this is not the case then the polytope $R_h = \tilde{P} \cap (\mathbb{R}^n, h)$ with $h \in (0, 1)$ is not combinatorially equivalent to Q . On the other hand, $\mathcal{N}(R_h) = \mathcal{N}(P + Q)$ and $\mathcal{N}(P + Q)$ is the smallest common subdivision of $\mathcal{N}(P)$ and $\mathcal{N}(Q)$ (i. e., the intersection of $\mathcal{N}(P)$ and $\mathcal{N}(Q)$; see p. 34). In our situation, the latter condition means $\mathcal{N}(P + Q) = \mathcal{N}(Q)$.

p. 427, 1. 13 show \rightarrow Show

p. 458 Add to index entry *polytope* the subentry *integrally closed*, 73