Errata for Second Corrected Printing of *Essential Topology*, M. D. Crossley, Springer (2007).

Page	Line	As printed	Should be
7	12	$\delta = 1/4$	$\delta = 1/5$ (and consequent changes!)
23	2 & 4	points of length 1	points with distance 1 from the origin
34	-2	if B is closed	if every point in T is contained in one of the subsets in B and B is closed
53	11	$\emptyset, \{a\}, \{b\}, \{a,b\}, \{c\}, \{a,b,c\}$	$\emptyset, \{a\}, \{a,b\}, \{c\}, \{a,c\}, \{a,b,c\}$.
80	8	are either ... is 1.	either agree, or one is 0 and one is 1.
82	-5	$x, y \in A$	$x, y \in A$ or $x = y$
83	11	function	continuous function
88	-4*	$t = t' = 1$ or $t = t' = 0$	$t = t' = 1$ or $t = t' = 0$ or $((x,y),t) = ((x',y'),t')$
92	3*	1 on x-axis	2
98	2	$(0,1)$ is homotopy to	$(0,1)$ is homotopy equivalent to
100	10, 11	a space *(2 occurrences)*	a discrete space
100	-13	$F(t,0) = f(g(0))$ and $F(t,1) = t$ for all $t \in T$.	$F(x,0) = f(g(x))$ and $F(x,1) = x$ for all $x \in T$.
100	-9	$p(t) = 1$ if $t \in U$, $p(t) = -1$ if $t \in V$.	$p(x) = 1$ if $x \in U$, $p(x) = -1$ if $x \in V$.
100	-5*	$h(x) = p(F(v,x))$	$h(t) = p(F(v,t))$
100	-4	$F(v,0) = f(g(0)) \in U$	$F(v,0) = f(g(v)) \in U$
104	6	$I_1, \ldots, I_n$.	$I_1, \ldots, I_n$, which we assume to be minimal.
108	13+	x *(4 occurrences)*	s, t
109	11	will assume that	will first prove this for functions f, g that satisfy
114	5,6	stereographic projection	a version of stereographic projection scaled appropriately to map the upper tropic to the circle of radius 1 and the lower to the circle of radius $\frac{1}{2}$
118	11*	$v_{k-1} - v_k$	$v_k - v_{k-1}$
118	-6	If $k > 0$ the **interior** ...	The **interior** is the complement of the boundary. For a 0-simplex (i.e., a point) the boundary is empty and the interior is the whole simplex.
120	1+	A much shorter and simpler proof is possible, and the proof given is probably not even correct	
124	9	a space	a Hausdorff space
129	6	$f, g : S^1 \to (X, x)$	$f, g : S^1 \to (X, x_0)$
129	-4*	$(f\#g)(s_1, \ldots, s_n)$	$(g\#f)(s_1, \ldots, s_n)$ This error causes too many later problems to list
137	-8	$f_*(j_1) + f_*(j_2)$	$f_*[j_1] + f_*[j_2]$
138	3	element of $\pi_n(X)$	element of $\pi_n(Y)$
138	-7	that; because	that, because
143	2,3	$p(1) = (1,0)$.	$p(1) = (1, \sin(1))$.
145	4	$\beta_i \in \pi_1(U)$ or $\beta_i \in \pi_1(V)$	β_i is in $j_*(\pi_1(U))$ or $k_*(\pi_1(V))$, where $j_* : \pi_1(U) \to \pi_1(X)$ and $k_* : \pi_1(V) \to \pi_1(X)$ are the homomorphisms induced by the inclusions
148	5	S^n is path connected.	S^n is path connected for $n \geq 1$.
156	-3	Proof of Prop 9.7 proves the analogous statement for singular homology and should be replaced	
166	9,10	Exercise 9.5 should be deleted	
169	4	$f : \Delta^3 \to X$ is a 3-simplex	$f : \Delta^2 \to X$ is a 2-simplex
169	5	then $\delta_3(f)$ is the 2-chain	then $\delta_2(f)$ is the 1-chain
169	6*	$\delta_3(f)$	$\delta_2(f)$
169	7	if $f : \Delta^4 \to X$ is a 4-simplex	if $f : \Delta^3 \to X$ is a 3-simplex
169	7	then $\delta_2(\delta_3(f))$ is the 2-chain	then $\delta_2(\delta_3(f))$ is the 1-chain
169	-1	x_n *(4 occurrences)*	x_{n-1}
170	4, 5	an n-simplex $f : \Delta^n \to X$	an $n+1$-simplex $f : \Delta^{n+1} \to X$
171	3	For each $n > 0$,	For each $n \geq 0$,

171	-6	the sum of the groups $H_i(P_j)$	the direct sum of the groups $H_i(P_j)$
173	-4	another pointed map	another continuous map
174	16	$C_n(f)(x)$	$C_{n-1}(f)(x)$
176	-17	By adding these composites	By taking the corresponding linear combination of these
176	-16	$(\sigma \times 1) \circ \alpha_n$	$(\sigma \times id) \circ \alpha_n$
176	-5	$\alpha_n : \Delta^{n+1} \to \Delta^n \times I$	$\alpha_n \in C_{n+1}(\Delta^n \times I)$
179	11*	$\Phi_n =$	$\Phi_n(\sigma) =$
179	-5*	$g(\sigma\mathbf{x}) - f(\sigma\mathbf{x}),$	$g(\sigma) - f(\sigma),$
181	15	$s \circ i_1 \circ h_1, \ldots, s \circ i_1 \circ h_1$	$s \circ i_1 \circ h_1, \ldots, s \circ i_6 \circ h_6$
181	-15	composing sd_2	composing with sd_2
182	-1*	The right most arrows need to swap destinations	
183	17*	$[b_1, b_3]$	$[v_1, b_3]$
183	-10	$sd_{n-1}\delta_n(id_n)$	$sd_{n-1}(\delta_n(id_n))$
183	-4,5	$sd_{n-1}(\delta_n(id_n)) = sd_{n-1} \circ \sum_{i=0}^n (-1)^i d^i$	$sd_{n-1}(\delta_n(id_n)) = \sum_{i=0}^n (-1)^i d^i \circ sd_{n-1}$
183	-3	h_σ in sd_n	$h_\sigma \circ d^n$ in $sd_n \circ d^n$
184	1+	Most of the details of this proof need revising, though the ideas are correct	
187	12	of $H_n(U \cap V)$	of $H_{n-1}(U \cap V)$
187	14	in $B_n(U \cap V)$	in $B_{n-1}(U \cap V)$
187	19	modulo Im δ_{n+1}	in $H_{n-1}(U \cap V)$
187	-1	in $H_n(U \cap V)$	in $H_{n-1}(U \cap V)$
191	16	some disc	some closed disc
194	2	in Example 8.18	in Example 10.23
195	17	they you can rely on its	then you can rely on its
196	4	$\mathbf{R}^2 - \{-1, +1\}$	$\mathbf{R}^2 - \{(-1,0), (1,0)\}$
197	-2	two points	two distinct points
198	-2	point.	point, and adjusting higher dimensional simplices that have this simplex as a subsimplex in a similar way
202	-9,-8	independent of i if	independent of j if
208	-7	group with two elements if $\mathbf{Z}/2$	group with two elements is $\mathbf{Z}/2$
215	9	No. No. Yes. No.	Yes. No. Yes. No.
215	11	(1) 0. (2) -2. (3) 0.	(1) 1. (2) 0. (3) 0. (4) -2. (5) 0.
215	-10	8.3	8.2
215	-4	8.5	8.4
216	3	$(\mathbf{R}^3 -' \{0\})$ *(2 occurrences)*	$(\mathbf{R}^3 - \{0\})$

A * indicates that the error occurs in a diagram or displayed formula.
A - means counting from the bottom of the page.

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The following corrections to the first edition were incorporated into the second printing (page numbers refer to first edition):

Page	Line	As printed	Should be
9	18	$\delta = x - 2$	$\delta_x = x - 2$
18	-3	$g(f(r)$	$g(f(r))$
19	-1	$y = a + b + \delta + x$.	$y = a + b + \delta - x$.
43	15	as it contains u.	as u is in the image of f.
71	16	as happens with	as
73	8	describing maps from product	describing maps to product
79	6	X/A is homeomorphic to S^1.	X/A is homeomorphic to S^2.
84	4	whenever $x \sim y$ }	whenever $x \sim y$.
86	5*	either L or R).	either L or R) or $x = y$.
95	13	by a suitable version of the	by the
98	6*	$\frac{1-t+tx}{2}$	$\frac{1-t}{2} + tx$
110	15	degree n	degree n, by Example 6.27.
111	-16	contains $B_\delta(x, y)$.	contains $B_{\min(\delta,r)}(x, y)$.
113	-1	$\mathbf{x} \in S^2$ such that $v(\mathbf{x}) = 0$.	$(x, y, z) \in S^2$ such that $v(x, y, z) = 0$.
116	9	$f(x, y) = (x, -y)$	$f(x, y) = (-x, -y)$
120	-6	$j - 1$-simplex.	$j - 1$-simplex (unless $j = 0$, in which case $S \cap T$ contains at most a single point, which is contained in the interior of T, so it cannot be contained in the interior of S, and must, in fact, be one of the vertices of S, so certainly it is a subsimplex of S).
131	11*	if$s_n \leq \frac{t}{2}$.	if $s_n \leq \frac{t}{2}$.
134	10	When $t = 0$, $F_(s_1, s_2, 0)$	When $t = 0$, $F(s_1, s_2, 0)$
145	15*	if $s \geq \frac{1}{2}$.	if $s \geq \frac{1}{2}$,
145	-7	both definitions gives	both definitions give
162	3	$= (v_2 - v_1) + (v_0 - v_2) + (v_0 - v_1) = 0,$	$= (v_2 - v_1) + (v_0 - v_2) + (v_1 - v_0) = 0,$
191	-6*		The • shapes should be removed from the diagrams
192	9*	.	, as in Example 8.26
208	-7	two elements if $\mathbf{Z}/2$,	two elements is $\mathbf{Z}/2$,
221	30	gluing lemma, 86	gluing lemma, 87

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