typos in MATH 583A&B class notes

2019-01-13, 19:50

On the right is the cover of the class notes that I have. If you have some other version, and the page numbering seems to be different — please tell me.

Thanks to: Dwight Nwaigwe, Kenneth Plackowski, Kenneth Yamamoto.

cover

\[ \text{MATH 583A} \rightarrow \text{MATH 583A&B} \]

page 96

Figure 11: \[ z = \rho_2 \exp(i\theta_2) \rightarrow z = 1 + \rho_2 \exp(i\theta_2) \]

page 98

Figure 12: the arrow on \( C_3 \) part of the contour is wrong

page 108

near the middle of the page: mathematicians \[ \rightarrow \text{ mathematicians} \]

page 143

in 2 places: \[ 1 - \frac{1}{2^2} + \frac{1}{2^2} - \frac{1}{3^2} + \cdots \rightarrow 1 - \frac{1}{2^2} + \frac{1}{3^2} - \frac{1}{4^2} + \cdots \]

page 176

next formula after (4.56): \[ \int_{-\infty}^{\infty} \delta(z) \varphi(z) \frac{dz}{f'(z)} \rightarrow \int_{-\infty}^{\infty} \delta(z) \varphi(x) \frac{dz}{f'(x)} \]

page 183

near the middle of the page: particularly \[ \rightarrow \text{ particularly} \]

page 235

near the top of the page: \[ B_0 = \frac{2}{L} \int_{0}^{L} f(x) dx \rightarrow B_0 = \frac{1}{L} \int_{0}^{L} f(x) dx \]
in 2 places: \( T : H \to \mathbb{R} \quad \to \quad T : H \to \mathbb{C} \) — no need to bound ourselves to reals, and in the beginning of the page 243 complex conjugates do appear.

near the top of the page: \[ \begin{vmatrix} -v(x)u'(x) + v'(x)u(x) \\ \end{vmatrix} \bigg|_0^1 \quad \to \quad \begin{vmatrix} -v(x)u'(x) + v'(x)u(x) \\ \end{vmatrix} \bigg|_0^1 \]

next row: \[ +u'(1)v(1) \quad \to \quad -u'(1)v(1) \]

after “with the associated domain is”: \[ v(0) = 0 \quad \to \quad v(1) = 0 \]

near the middle of the page: \( s \to 0 \quad \to \quad \sigma \to 0 \)

not a typo, but a simpler proof of Theorem 7: Assume \( \lambda \) is in the residual spectrum of \( L \). Then (by Theorem 6) \( \tilde{\lambda} \) is an eigenvalue of \( L^* = L \). Then (by the consequence of the proof of Theorem 5) \( \lambda \) is real, so \( \lambda = \tilde{\lambda} \) is an eigenvalue of \( L \), i.e., it is in the point spectrum of \( L \).

proof of Theorem 7: \( y \in \mathcal{N}(L - \tilde{\lambda}) \quad \to \quad y \in \mathcal{N}(L^* - \tilde{\lambda}) \) — although \( L^* = L \) here, anyway.

footnote 72: \( k \neq 1 \quad \to \quad k > 0 \) — otherwise rank is never equal to 1, which is the rank of “not generalized” eigenvectors

beginning of 6.5.2: \( \text{domain of } S \quad \to \quad \text{range of } S \)

\[ \sigma_p(S) = \{0\} \quad \to \quad \sigma_p(S) = \emptyset \] \( \to \) \{0\} usually means “a set with one element, namely 0”.

near the bottom of the page: centered on \( \lambda = 1 \quad \to \quad \text{centered on } \lambda = 0 \)

near the bottom of the page: shows that \( |\lambda| > 0 \quad \to \quad \text{shows that } |\lambda| > 1 \)
page 277

(7.7): \[ \int_{0}^{\xi} \rightarrow \int_{a}^{\xi} \]

(7.9): \( (\xi - x) \rightarrow (x - \xi) \)

page 278

end of 7.1: Section 1.3 \( \rightarrow \) Section 7.3

(7.18): \[ f(t) dt \rightarrow f(\tau) d\tau \]

page 281

near the top of the page: Sturm Liouville \( \rightarrow \) Sturm–Liouville

page 283

near the middle of the page: Sturm Liouville \( \rightarrow \) Sturm–Liouville

before (7.49): Heaveside \( \rightarrow \) Heaviside

page 290

(7.85): \[ pu'' + p' u + qu \rightarrow pu'' + p' u' + qu \]

page 300

near the top of the page: \[ Lu = f \rightarrow Lu = g \]

page 302

the very bottom of the page: \[ \frac{1}{2} \xi^2 + c_1 \rightarrow -\frac{1}{2} \xi^2 + c_1 \]

page 303

right after (7.165): \[ \int_{\xi}^{\xi} K_\xi dx \rightarrow \int_{\xi}^{1} K_\xi dx \]

footnote \(^{85}\): \[ K'_2 |_{x=\xi} \rightarrow K'_2 |_{x=\xi} \]

page 309

between (7.189) and (7.190): sides of (192) \( \rightarrow \) sides of (189)
page 321
after (8.21): \((1 - \lambda \alpha_{11} c_1) \rightarrow (1 - \lambda \alpha_{11}) c_1\)

page 323
near the bottom of the page: \(\begin{pmatrix} \frac{1}{3} \\ \frac{1}{2} \end{pmatrix} \rightarrow \begin{pmatrix} \frac{1}{3} \\ \frac{1}{2} \end{pmatrix}\)

page 328
(8.39): \(\lambda_m \int_a^b u_m(\xi) \rightarrow \lambda_n \int_a^b u_n(\xi)\)
the very bottom of the page: \(\frac{\lambda m}{\lambda m} \int_a^b \rightarrow \frac{\lambda m}{\lambda n} \int_a^b\)

page 335
after (8.62): \(\text{powers of } \lambda \rightarrow \text{powers of } \mu\)

page 341
near the top of the page: \(\text{cam pact} \rightarrow \text{compact}\)
upper half of the page: \(T = \lim_{n \to \infty} T_n\) — we have \(\|T_{n+1} - T_n\| = 1\), so there is no limit here.

page 347
(9.16): \(\frac{\partial L}{\partial q} + \rightarrow \frac{\partial L}{\partial q} \delta q +\)

page 351
(9.42): \(\sqrt{x} \rightarrow \sqrt{x}\)

page 354
near the top of the page: \(\frac{\delta L}{\delta q} \bigg|_{t_1}^{t_2} \rightarrow \frac{\delta L}{\delta q} \bigg|_{t_1}^{t_2}\)
(9.54): \(\frac{\delta f}{\delta y_x} \bigg|_{x_1}^{x_2} \rightarrow \frac{\delta f}{\delta y_x} \bigg|_{x_1}^{x_2}\)
page 358
\[ f(k; a) = e^{ka} + e^{-ka} \quad \rightarrow \quad f(k; a) = \frac{(e^{ka} + e^{-ka})}{2} \]

page 360
(9.75) and (9.76):
\[ \frac{\delta F}{\delta n} \quad \rightarrow \quad \frac{\delta F}{\delta u} \]

page 361
in the paragraph after (9.81):
\[ [v] \quad \rightarrow \quad [v] \]

page 363
near the top of the page:
\[ (\delta u) y \quad \rightarrow \quad (\delta u)_y \]

page 375
(9.162):
\[ \sum_i p_i d\dot{q}_i + \dot{q}_i d p_i - \frac{\partial L}{\partial \dot{q}_i} d\dot{q}_i - \frac{\partial L}{\partial q_i} dq_i - \frac{\partial L}{\partial t} dt \]
\[ \quad \rightarrow \quad \sum_i \left( p_i d\dot{q}_i + \dot{q}_i d p_i - \frac{\partial L}{\partial \dot{q}_i} d\dot{q}_i - \frac{\partial L}{\partial q_i} dq_i - \frac{\partial L}{\partial t} dt \right) \]

page 376
the lower half of the page:
\[ \text{the } 20^{th} \text{ century} \quad \rightarrow \quad \text{the } 20^{th} \text{ century} \]