BRITISH STANDARD

BS 5261-3:
1989

Incorporating
Amendment No. 1

Copy preparation and proof correction —

Part 3: Specification for marks for mathematical copy preparation and mathematical proof correction and their use

UDC 001.816:655.25.8:51

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Paper and Printing Standards Policy Committee (PAM/-) to Technical Committee PAM/22, upon which the following bodies were represented:

Aslib
Association of Teachers of Printing and Allied Subjects
British Printing Industries Federation
Cambridge University Press
Her Majesty's Stationery Office
Institute of Printing
Library Association
London College of Printing
National Graphical Association
National Union of Journalists
Publishers Association
Society of Industrial Artists and Designers
Society of Typographic Designers

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

London Mathematical Society
Open University
Royal Society
University of Reading

This British Standard, having been prepared under the direction of the Paper and Printing Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 30 June 1989

First published as BS 1219 June 1945
First revision December 1958
Second revision as BS 5261-3 June 1989

The following BSI references relate to the work on this standard:
Committee reference PAM/22
Draft for comment 85/65602 DC

ISBN 0 580 17022 5

Amendments issued since publication

Amd. No.	Date of issue	Comments
6619	December 1990	Indicated by a sideline in the margin

Contents

Foreword

This Part of BS 5261 has been prepared under the direction of the Paper and Printing Standards Policy Committee. It supersedes BS 1219:1958 and BS 1219M:1961, which are withdrawn. The marks for mathematical copy preparation and proof correction specified herein are compatible with those specified in BS 5261-2.

In BS 5261-2, the marks for copy preparation and proof correction are so specified that the use of words is avoided; hence preparation and correction are independent of language. It was planned to extend the principles of BS 5261-2 to marks for mathematical copy preparation and proof correction but, because mathematics employs so many symbols, it has not proved possible to avoid the use of words in all the marks specified. Where words are specified as marginal instructions, the possibility of using symbols has been considered, but the symbols proposed could too easily have been confused with mathematical symbols.

This Part of BS 5261 specifies marks for all the special instructions that are likely to be needed for marking-up mathematical copy. The marks are specified so that they are available for those who need them, not because their use is always essential. Editors and printers who are accustomed to working together may have an understanding of each other's practices that makes such extensive use of marks unnecessary.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 5261 specifies marks for use in the preparation of mathematical copy and the correction of mathematical proofs. Marks specified in BS 5261-2 are not repeated here unless they have some special application in mathematical work.

Appendix A gives examples of the use of the marks.

Appendix B lists characters and symbols that are often confused because they are similar in form.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 5261 the following definitions apply.

2.1
display

to set matter so that it is separated from the text by space above and below

2.2
em space

a horizontal distance equal to the nominal type size (see Figure 1)

NOTE As an approximate visual guide, the width of the em space is similar to the width occupied by capital W or capital M.

2.3
normal space

a fixed space specified by editor, designer and typesetter and usually about 30 % of an em space

2.4
small space

a fixed space specified by editor, designer and typesetter and usually about 15 % of an em space

2.5
variable space

in justified setting, a word space whose precise size is determined by the need to fill out the line

NOTE Variable spaces are equal within a line, but vary from line to line within maximum and minimum limits fixed at the outset of a job by editor, designer and typesetter.

3 Copy preparation and proof correction

3.1 General

Typographic specifications, proofing procedures and marks for general copy preparation and proof correction shall comply with BS 5261-2.

3.2 Copy preparation

Copy shall be typed double spaced. The reverse side of the paper shall not be used. The minimum margins shall be 25 mm at the head and foot and on the right of the page and 40 mm on the left (see BS 5261-1). The textual and marginal marks used for marking-up copy shall be those marked with the letter M in Table 1. The marginal marks marked with the letter P shall not be used unless they are necessary to clarify the instructions.

NOTE The use of colour to distinguish different categories of mark is not specified here because photocopies of manuscript are sometimes required.

3.3 Proof correction

The textual and marginal marks used in correcting proofs shall be those specified in Table 1. For each correction a distinct mark shall be made:

a) in the text: to indicate exactly where a correction is required;

b) in the margin: to draw attention to the instruction and, if necessary, to amplify its meaning.

A solidus (/) or caret (⋏) shall follow each marginal mark to show where the instruction ends, unless the marginal mark incorporates a solidus, e.g. Y.

3.4 Colours for marking proofs

Proof corrections shall be made in coloured inks thus:

a) printer's errors marked by the printer for correction: green;

b) printer's errors marked by the customer and his agents for correction: red;

c) alterations and instructions made by the customer and his agents: black or dark blue.

3.5 General instructions on typescript

If a particular instruction applies at several different places in the typescript, a general instruction shall be given at the beginning, in preference to repeating the particular instruction each time it is required. Any exceptions to the general instruction shall be indicated where they occur in the typescript (see Appendix A).

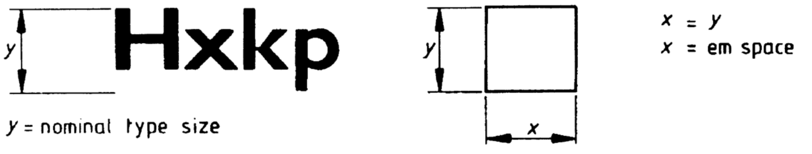


Figure 1 — Illustration of em space

3.6 Repeated instructions

If a marginal instruction applies at more than one place in a line, the multiplication symbol shall be used to avoid repetition of the instruction, e.g. "prime × 2".

3.7 Spacing

The sizes required for the normal space and the small space shall be specified in general instructions.

NOTE The sizes should normally be agreed between editor, designer and typesetter before the instructions are prepared.

3.8 Letter symbols

General instructions shall, if necessary, state whether letter symbols are to be set upright (roman) or sloping (italic), apart from exceptions indicated in the text.

3.9 Equations

If an equation is likely to be too long to be set on one line, places where it may, if necessary, be split shall be marked on the typescript.

3.10 Explanatory notes

If an instruction requires an explanatory note, the note shall be written in the margin and encircled. If a correction cannot be clearly indicated by the use of marks alone, the correct form shall be written in the margin and encircled.

3.11 Special symbols

If a special symbol is required, it shall be encircled in the text and its name and reference number or an example taken from BS 5775-11 or another suitable list shall be given in the margin and encircled.

3.12 Ambiguities

Means of distinguishing between characters and symbols that might be confused because they are similar in form, e.g. capital O and zero, shall be explained in general instructions or explanatory notes (see Appendix B).

Table 1 — List of marks

NOTE The letter M indicates a mark to be used for marking-up copy and the letter P a mark to be used for correcting proofs. If a mark is also specified in BS 5261-2, its number in that standard appears in parenthesis after its number in this table.

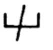
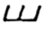
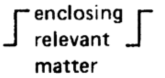
Number	Instruction	Textual mark	Marginal mark	Notes and examples
1 (B13)	Set or change to upright	M P Encircle character	M P 	
2 (B7)	Set or change to sloping	M P ______ under character	M P 	
3	Set or change to Greek letter	M P Encircle letter	M P Gk	
4	Set or change to German (Fraktur) letter	M P Encircle letter	M P Ger	
5	Set or change to Cyrillic letter	M P Encircle letter	M P Cyr	
6	Set or change to Hebrew letter	M P Encircle letter	M P Heb	
7	Set or change to script	M P Encircle letter	M P scr	
8	Set or change to open face	M P Encircle letter	M P open	
9	Set or change to sanserif	M P Encircle letter	M P sans	
10	Set or change to numeral	M P Encircle letter	M P num	
11	Check for wrong fount or size	P Encircle character	P X	A specific instruction should be given if possible
12	Set or change 1-line to 2-line fraction	M P Encircle fraction	M P 2-line	Change *A*/*B* to $\frac{A}{B}$
13	Use text-size fraction	MP Encircle fraction	MP 11pt etc. (according to size)	
14	Display	MP  enclosing relevant matter	P 	

Table 1 — List of marks

Number	Instruction	Textual mark	Marginal mark	Notes and examples
15	Do not break, display if necessary	M P enclosing relevant matter	P	
16 (B15)	Use superior	P / through character or ⅄ where required M ∨	P under character	
17 (B16)	Use inferior	P / through character or ⅄ where required M ∧	P over character	
18	Use superior to superior	P / through character or ⅄ where required	P under character	
19	Use inferior to inferior	P / through character or ⅄ where required	P over character	
20	Use superior to inferior	P / through character or ⅄ where required M	P around character	

Table 1 — List of marks

Number	Instruction	Textual mark	Marginal mark	Notes and examples
21	Use inferior to superior	P / through character or where required M	P around character	2
22	Set in suspended position (vertically centred)	M P around character	P	g f U V
23	Use em space	M P	P with number of em spaces in square, if more than one required	Textual mark, with a stem to show where the space is required may go above or below the line
24	Use normal space	M P	P	
25	Use small space	M P	P	
26	Close up to em space	P M	P	
27	Close up to normal space	P M	P	
28	Close up to small space	P M	P	
29 (C22)	Insert space between characters	M P | between characters	M P	Give size of space if necessary
30 (C23)	Insert variable space	M P	M P	

Appendix A Examples of marked-up copy and corrected proofs

A.1 General

For the purposes of illustration, the examples of marked-up copy given in **A.2** and **A.3** show a more extensive use of marks than may generally be necessary.

For reasons of economy, all marks in the examples are reproduced in black. However, users should note that to claim compliance with this Part of BS 5261, the colours specified in **3.4** need to be used when marking proof corrections.

In example 1 (**A.2.1**) and example 2 (**A.3.1**), which illustrate specialized mathematical typesetting, the instruction to set letter symbols in sloping (italic) is given to reduce the amount of mark up necessary. In simpler copy it may be preferable to adopt the opposite procedure (see **3.8**).

A.2 Example 1

NOTE In the case of this example the following general instructions would be given to the typesetter:

a) marks for BS 5261-2 are used;
b) letter symbols are to be sloping (italic) unless indicated otherwise;
c) capital letter O is marked "oh" to distinguish from numeral 0 (zero).

A.2.1 *Marked-up copy*

Hence we can take it that G has a normal elementary abelian p-subgroup A contained in Q with $\hat{A}$ abelian. Let $A_0 = \Omega_i(\hat{A})$. (If $A_0 \leq Z(I(V))$ for any suitable $\hat{A}$ then we see as above that $\hat{Q}$ is cyclic; in this case we take i minimal such that $\Omega_i(\hat{Q})$ is not central, put $A_0 = \Omega_i(\hat{Q})$ and adjust the e below slightly in the obvious way.) Consider now the Wedderburn decomposition of V with respect to A_0. The non-trivial homogeneous components can be labelled $W_1, W_1', \ldots, W_k, W_k', W_{k+1}, W_{k+2}, \ldots, W_m$ in such a way that for $1 \leq j \leq k$, the representation of A_0 on W_j' is a sum of irreducibles each contragredient to the irreducibles in W_j, and so that

$$V = C_V(A_0) \perp (W_1 \oplus W_1') \perp \ldots \perp (W_k \oplus W_k') \perp W_{k+1} \perp \ldots \perp W_m.$$

(If $I(V) = GL(V)$, we take $k = 0$ and replace $\perp$ by $\oplus$.) Then

$$C := C_{I(V)}(A_0) = I(C_V(A_0)) \times C_{I(W_1 \oplus W_1')}(A_0|W_1 \oplus W_1') \times \ldots \times C_{I(W_m)}(A_0|W_m).$$

Let e be minimal subject to $p \mid q^e - 1$ (or $p \mid q^{2e} - 1$ if X is unitary). If $1 \leq j \leq k$ then $C_{I(W_j \oplus W_j')}(A_0|W_j \oplus W_j') = GL(s_j, q^e)$ (resp. $GL(s_j, q^{2e})$) for some s_j. Consequently $s_j \leq d$ (and in fact $s_j \leq c \log d$ by [5] and its predecessors). Let now $B_0 = \Omega_1(O_p(C)) \cap I(V)'$. Then the image of B_0 is normal in G and we replace A by this image – so $A_0 = B_0$. Suppose (changing the notation slightly) that the first r_1 of the s_j are all equal to s_1 etc. Then $N_{I(V)}(B_0)$ contains $SL(s_j, q^e)^{r_j}/A_{r_j}$. Then $r_j \leq d$ and so $\sum r_j s_j \leq c d \log d$, and since e is also clearly bounded, the dimension of $W_1 \oplus W_1' \oplus \ldots \oplus W_k \oplus W_k'$ is bounded. Essentially the same argument shows that the dimension of $W_{k+1} \oplus \ldots \oplus W_m$ is also bounded: Each $C_{I(W_j)}(A_0|W_j)$ with $k + 1 \leq j \leq m$ is a classical group over $GF(q^e)$ of dimension s_j, say.

A.2.2 *Corrected proof*

Hence we can take it that G_α has a normal elementary abelian p-subgroup A contained in Q with $\hat{A}$ abelian. Let $A_0 = \Omega_1(\hat{A})$. (If $A_0 \leqslant Z\mathscr{I}(V)$ for any suitable $\hat{A}$ then we see as above that $\hat{Q}$ is cyclic; in this case we take minimal such that $\Omega_i(\hat{Q})$ is not central, put $A_0 = \Omega_i(\hat{Q})$ and adjust the e below slightly in the obvious way.) Consider now the Wedderburn decomposition of V with respect to A_0. The non-trivial homogeneous components can be labelled W_1, $W_1, \ldots, W_k$, W_k, W_{k+1}, $W_{k+2}, \ldots, W_m$ in such a way that for $1 \leqslant j \leqslant k$, the representation of A_0 on W'_j is a sum of irreducibles each contragredient to the irreducibles in W_j, and so that (prime × 2)

$$V = C_1(A_0) \perp (W_1 \oplus W'_1) \perp \ldots \perp (W_k \oplus W'_k) \perp W_{k+1} \perp \ldots \perp W_m.$$

(If $\mathscr{I}(V) = \mathrm{GL}(V)$, we take $k = 0$ and replace $\perp$ by $\oplus$.) Then

$$C := C_{\mathscr{I}(V)}(A_0) = \mathscr{I}(C_V(A_0)) \times C_{\mathscr{I}(W_1 \oplus W'_1)}(A_0 W_1 \oplus W'_1) \times \ldots \times C_{\mathscr{I}(W_m)}(A_0 W_m).$$

(modulus × 2)

Let e be minimal subject to $p|q^e - 1$ (or $p|q^{2e} - 1$ if X is unitary). If $1 \leqslant j \leqslant k$ then $C_{\mathscr{I}(W_j \oplus W'_j)}(A_0|_{W_j \oplus W'_j}) = \mathrm{GL}(s_j, q^e)$ (resp. $\mathrm{GL}(s_j, q^{2e})$) for some s_j. Consequently $s_j \leqslant d$ (and in fact $s_j \leqslant c \log d$ by 5 and its predecessors). Let now $B_0 = \Omega_1(O_p(C)) \cap \mathscr{I}(V)'$. Then the image of B_0 is normal in G_α and we replace A by this image—so $A_0 = B_0$. Suppose (changing the notation slightly) that the first r_1 of the s_i are all equal to s_1, etc. Then $N_{\mathscr{I}(V)}(B_0)$ contains $\mathrm{SL}(s_j, q^e)$ A_{r_j}. Then $r_j \leqslant d$ and so $\sum r_j s_j \leqslant c^2 d \log^2 d$, and since e is also clearly bounded, the dimension of $W_1 \oplus W'_1 \oplus \ldots \oplus W_k \oplus W'_k$ is bounded. Essentially the same argument shows that the dimension of $W_{k+1} \oplus \ldots \oplus W_m$ is also bounded: Each $C_{\mathscr{I}(W_j)}(A_0|_{W_j})$ with $k+1 \leqslant j \leqslant m$ is a classical group over $\mathrm{GF}(q^e)$ of dimension s_j, say.

A.2.3 *Final version*

Hence we can take it that G_α has a normal elementary abelian p-subgroup A contained in Q with $\hat{A}$ abelian. Let $A_0 = \Omega_1(\hat{A})$. (If $A_0 \leqslant Z(\mathscr{I}(V))$ for any suitable $\hat{A}$ then we see as above that $\hat{Q}$ is cyclic; in this case we take i minimal such that $\Omega_i(\hat{Q})$ is not central, put $A_0 = \Omega_i(\hat{Q})$ and adjust the e below slightly in the obvious way.) Consider now the Wedderburn decomposition of V with respect to A_0. The non-trivial homogeneous components can be labelled W_1, $W'_1, \ldots, W_k$, W'_k, W_{k+1}, $W_{k+2}, \ldots, W_m$ in such a way that for $1 \leqslant j \leqslant k$, the representation of A_0 on W'_j is a sum of irreducibles each contragredient to the irreducibles in W_j, and so that

$$V = C_V(A_0) \perp (W_1 \oplus W'_1) \perp \ldots \perp (W_k \oplus W'_k) \perp W_{k+1} \perp \ldots \perp W_m.$$

(If $\mathscr{I}(V) = \mathrm{GL}(V)$, we take $k = 0$ and replace $\perp$ by $\oplus$.) Then

$$C := C_{\mathscr{I}(V)}(A_0) = \mathscr{I}(C_V(A_0)) \times C_{\mathscr{I}(W_1 \oplus W'_1)}(A_0|_{W_1 \oplus W'_1}) \times \ldots \times C_{\mathscr{I}(W_m)}(A_0|_{W_m}).$$

Let e be minimal subject to $p|q^e - 1$ (or $p|q^{2e} - 1$ if X is unitary). If $1 \leqslant j \leqslant k$ then $C_{\mathscr{I}(W_j \oplus W'_j)}(A_0|_{W_j \oplus W'_j}) = \mathrm{GL}(s_j, q^e)$ (resp. $\mathrm{GL}(s_j, q^{2e})$) for some s_j. Consequently $s_j \leqslant d$ (and in fact $s_j \leqslant c \log d$ by [5] and its predecessors). Let now $B_0 = \Omega_1(O_p(C)) \cap \mathscr{I}(V)'$. Then the image of B_0 is normal in G_α and we replace A by this image—so $A_0 = B_0$. Suppose (changing the notation slightly) that the first r_1 of the s_i are all equal to s_1, etc. Then $N_{\mathscr{I}(V)}(B_0)$ contains $\mathrm{SL}(s_j, q^e)^{r_j} A_{r_j}$. Then $r_j \leqslant d$ and so $\sum r_j s_j \leqslant c^2 d \log^2 d$, and since e is also clearly bounded, the dimension of $W_1 \oplus W'_1 \oplus \ldots \oplus W_k \oplus W'_k$ is bounded. Essentially the same argument shows that the dimension of $W_{k+1} \oplus \ldots \oplus W_m$ is also bounded: Each $C_{\mathscr{I}(W_j)}(A_0|_{W_j})$ with $k+1 \leqslant j \leqslant m$ is a classical group over $\mathrm{GF}(q^e)$ of dimension s_j, say.

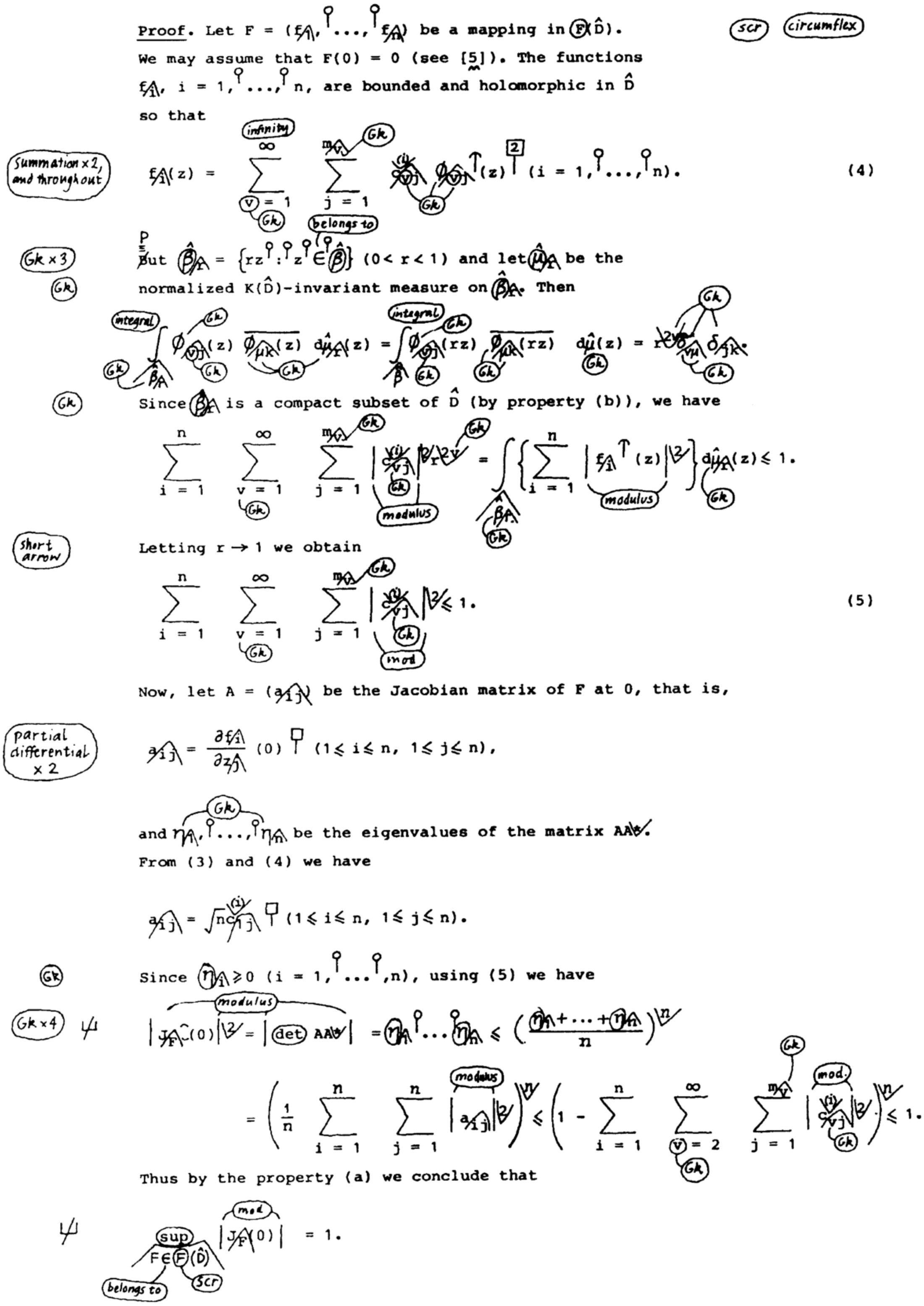
A.3 Example 2

NOTE In the case of this example the following general instructions would be given to the typesetter:

a) marks from BS 5261-2 are used;

b) letter symbols are to be sloping (italic) unless indicated otherwise.

A.3.1 *Marked-up copy*



Proof. Let $F = (f_1, \ldots, f_n)$ be a mapping in $F(\hat{D})$.
We may assume that $F(0) = 0$ (see [5]). The functions
f_i, $i = 1, \ldots, n$, are bounded and holomorphic in $\hat{D}$
so that

$$f_i(z) = \sum_{v=1}^{\infty} \sum_{j=1}^{m_v} c_{vj}^{(i)} \phi_{vj}(z) \quad (i = 1, \ldots, n). \qquad (4)$$

But $B_r = \{rz : z \in B\}$ $(0 < r < 1)$ and let $\hat{\mu}_r$ be the
normalized $K(\hat{D})$-invariant measure on B_r. Then

$$\int_{B_r} \phi_{vj}(z)\, \overline{\phi_{\mu k}(z)}\, d\hat{\mu}_r(z) = \int_{B} \phi_{vj}(rz)\, \overline{\phi_{\mu k}(rz)}\, d\hat{\mu}(z) = r^{2v} \delta_{v\mu} \delta_{jk}.$$

Since B_r is a compact subset of $\hat{D}$ (by property (b)), we have

$$\sum_{i=1}^{n} \sum_{v=1}^{\infty} \sum_{j=1}^{m_v} |c_{vj}^{(i)}|^2 r^{2v} = \int_{B_r} \left\{ \sum_{i=1}^{n} |f_i(z)|^2 \right\} d\hat{\mu}_r(z) \leqslant 1.$$

Letting $r \to 1$ we obtain

$$\sum_{i=1}^{n} \sum_{v=1}^{\infty} \sum_{j=1}^{m_v} |c_{vj}^{(i)}|^2 \leqslant 1. \qquad (5)$$

Now, let $A = (a_{ij})$ be the Jacobian matrix of F at 0, that is,

$$a_{ij} = \frac{\partial f_i}{\partial z_j}(0) \quad (1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n),$$

and $\eta_1, \ldots, \eta_n$ be the eigenvalues of the matrix AA^*.
From (3) and (4) we have

$$a_{ij} = \sqrt{n}\, c_{1j}^{(i)} \quad (1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n).$$

Since $\eta_i \geqslant 0$ $(i = 1, \ldots, n)$, using (5) we have

$$|J_F(0)|^2 = |\det AA^*| = \eta_1 \cdots \eta_n \leqslant \left(\frac{\eta_1 + \cdots + \eta_n}{n}\right)^n$$

$$= \left(\frac{1}{n} \sum_{i=1}^{n} \sum_{j=1}^{n} |a_{ij}|^2\right)^n \leqslant \left(1 - \sum_{i=1}^{n} \sum_{v=2}^{\infty} \sum_{j=1}^{m_v} |c_{vj}^{(i)}|^2\right)^n \leqslant 1.$$

Thus by the property (a) we conclude that

$$\sup_{F \in F(\hat{D})} |J_F(0)| = 1.$$

A.3.2 *Corrected proof*

Proof. Let $E = (f_1, \ldots, f_n)$ be a mapping in $F(\hat{D})$. We may assume that $F(0) = 0$ (see [5]). The functions f_i, $i = 1, \ldots, n$, are bounded and holomorphic in $\hat{D}$ so that

$$f_i(z) = \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} c_{\nu j}^{(i)} \phi_{\nu j}(z) \qquad [3] \qquad (i = 1, \ldots, n) \quad (4)$$

Put $\hat{\beta}_r = \{rz : z \in \hat{\beta}\}$ $(0 < r < 1)$ and let $\hat{\mu}_r$ be the normalized $K(\hat{D})$-invariant measure on $\hat{\beta}_r$. Then

$$\int_{\hat{\beta}_r} \phi_{\nu j}(z)\overline{\phi_{\mu k}(z)}\, d\hat{\mu}_r(z) = \int_{\hat{\beta}} \phi_{\nu j}(rz)\overline{\phi_{\mu k}(rz)}\, d\hat{\mu}(z) = r^{2\nu}\delta_{\nu\mu}\delta_{jk}\,.$$

Since $\hat{\beta}_r$ is a compact subset of $\hat{D}$ (by property (b)), we have

$$\sum_{i=1}^{n} \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 r^{2\nu} = \int_{\hat{\beta}_r} \left\{ \sum_{i=1}^{n} |f_i(z)|^2 \right\} d\hat{\mu}_r(z) \leqslant 1\,.$$

Letting $r \to 1$ we obtain

$$\sum_{i=1}^{n} \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 \leqslant 1\,. \qquad (5)$$

Now, let $A = (a_{ij})$ be the Jacobian matrix of F at 0, that is,

$$a_{ij} = \frac{\partial f_i}{\partial z_j}(0) \quad (1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n)\,,$$

and $\eta_1, \ldots, \eta_n$ be the eigenvalues of the matrix AA^*. From (3) and (4) we have $a_{ij} = \sqrt{n}c_{1j}^{(i)}$ $(1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n)$.

Since $\eta_i \geqslant 0$ $(i = 1, \ldots, n)$, using (5) we have

$$|J_F(0)|^2 = |\det AA^*| = \eta_1 \ldots \eta_n \leqslant \left(\frac{\eta_1 + \ldots + \eta_n}{n} \right)^n$$

$$= \left(\frac{1}{n} \sum_{i=1}^{n} \sum_{j=1}^{n} |a_{ij}|^2 \right)^n \leqslant \left(1 - \sum_{i=1}^{n} \sum_{\nu=2}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 \right)^n \leqslant 1\,.$$

Thus by the property (a) we conclude that

$$\sup_{F \in \mathcal{F}(\hat{D})} |J_F(0)| = 1\,.$$

$$\int_{\hat{\beta}_r} \phi_{\nu j}(z)\overline{\phi_{\mu k}(z)}\, d\hat{\mu}_r(z) = \int_{\hat{\beta}} \phi_{\nu j}(rz)\overline{\phi_{\mu k}(rz)}\, d\hat{\mu}(z) = r^{2\nu}\delta_{\nu\mu}\delta_{jk}\,.$$

A.3.3 *Final version*

Proof. Let $F = (f_1, \ldots, f_n)$ be a mapping in $\mathscr{F}(\hat{D})$. We may assume that $F(0) = 0$ (see [5]). The functions f_i, $i = 1, \ldots, n$, are bounded and holomorphic in $\hat{D}$ so that

$$f_i(z) = \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} c_{\nu j}^{(i)} \phi_{\nu j}(z) \qquad (i = 1, \ldots, n). \tag{4}$$

Put $\hat{\beta}_r = \{rz : z \in \hat{\beta}\}$ $(0 < r < 1)$ and let $\hat{\mu}_r$ be the normalized $K(\hat{D})$-invariant measure on $\hat{\beta}_r$. Then

$$\int_{\hat{\beta}_r} \phi_{\nu j}(z) \overline{\phi_{\mu k}(z)} \, d\hat{\mu}_r(z) = \int_{\hat{\beta}} \phi_{\nu j}(rz) \overline{\phi_{\mu k}(rz)} \, d\hat{\mu}(z) = r^{2\nu} \delta_{\nu\mu} \delta_{jk}.$$

Since $\hat{\beta}_r$ is a compact subset of $\hat{D}$ (by property (b)), we have

$$\sum_{i=1}^{n} \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 r^{2\nu} = \int_{\hat{\beta}_r} \left\{ \sum_{i=1}^{n} |f_i(z)|^2 \right\} d\hat{\mu}_r(z) \leqslant 1.$$

Letting $r \to 1$ we obtain

$$\sum_{i=1}^{n} \sum_{\nu=1}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 \leqslant 1. \tag{5}$$

Now, let $A = (a_{ij})$ be the Jacobian matrix of F at 0, that is,

$$a_{ij} = \frac{\partial f_i}{\partial z_j}(0) \quad (1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n),$$

and $\eta_1, \ldots, \eta_n$ be the eigenvalues of the matrix AA^*. From (3) and (4) we have

$$a_{ij} = \sqrt{n} c_{1j}^{(i)} \quad (1 \leqslant i \leqslant n,\ 1 \leqslant j \leqslant n).$$

Since $\eta_i \geqslant 0$ $(i = 1, \ldots, n)$, using (5) we have

$$|J_F(0)|^2 = |\det AA^*| = \eta_1 \ldots \eta_n \leqslant \left(\frac{\eta_1 + \ldots + \eta_n}{n} \right)^n$$

$$= \left(\frac{1}{n} \sum_{i=1}^{n} \sum_{j=1}^{n} |a_{ij}|^2 \right)^n \leqslant \left(1 - \sum_{i=1}^{n} \sum_{\nu=2}^{\infty} \sum_{j=1}^{m_\nu} |c_{\nu j}^{(i)}|^2 \right)^n \leqslant 1.$$

Thus by the property (a) we conclude that

$$\sup_{F \in \mathscr{F}(\hat{D})} |J_F(0)| = 1.$$

Appendix B Characters and symbols similar in form

B.1 General

A list of characters which are often confused because they are similar in form is given in Table 2.

Table 2 — Characters and symbols similar in form

Handwritten	Typeset	Description	Notes
a	a	Small-letter a	
α	α	Small-letter alpha	
$\propto$	$\propto$	Proportional to, variation	
∞	∞	Infinity	
A	A	Capital A	
Λ	Λ	Capital lambda	
Δ	Δ	Capital delta	
$\wedge$	$\wedge$	Vector product	
$\wedge$	$\wedge$	Logical 'and'	
B	B	Capital B	
β	β	Small-letter beta	
c	c	Small-letter c	
C	C	Capital C	
$\subset$	$\subset$	Contained in	
(	(	Open parenthesis	
$\supset$	$\supset$	Contains	
)	)	Close parenthesis	
,	,	Comma	
d	d	Small-letter d	
δ	δ	Small-letter delta	
∂	∂	Partial differential	
e	e	Small-letter e	
ϵ	ϵ	Small-letter epsilon	
ε	ε	Small-letter 'curly epsilon'	
ξ	ξ	Small-letter xi	
$\in$	$\in$	Belongs to, is an element of	

Table 2 — Characters and symbols similar in form

i	i	Small-letter i	
ι	ι	Small-letter iota	
k	k	Small-letter k	
K	K	Capital K	
κ	κ	Small-letter kappa	
l ℓ	~~l~~ 1	Small-letter l	Typed l ('ell') and 1 (one) may be identical: the printer should be given clear instructions
I	~~l~~ I	Capital I	
l 1	~~l~~ 1	Numeral one	
|	|	Modulus (vertical stroke)	
L	L	Capital L	
∠	∠	Angle	
n	n	Small-letter n	
η	η	Small-letter eta	
∩	∩	Intersection	
o	o	Small-letter o	Zero is usually unmarked, but when inferior/superior it may need to be marked. Degree sign (if typed as small-letter 'oh') should be identified in margin. Capital and small-letter italic 'oh' may be used to indicate order of magnitude
O	O	Capital O	
0	0	Zero	
∘	∘	Composition sign	
°	°	Degree sign	
σ	σ	Small-letter sigma	
p	p	Small-letter p	
P	P	Capital P	
ρ	ρ	Small-letter rho	
ϱ	ϱ	Small-letter 'curly rho'	
s	s	Small-letter s	
S	S	Capital S	
5	5	Numeral five	

Table 2 — Characters and symbols similar in form

Handwritten	Typeset	Description	Notes
t	t	Small-letter t	
T	T	Capital T	
r	r	Small-letter r	
τ	τ	Small-letter tau	
Γ	Γ	Capital gamma	
+	+	Plus sign	
†	†	Dagger	
u	u	Small-letter u	
U	U	Capital U	
μ	μ	Small-letter mu	
$\cup$	$\cup$	Union	
v	v	Small-letter v	
V	V	Capital V	
r	r	Small-letter r	
ν	ν	Small-letter nu	
$\vee$	$\vee$	Logical 'or'	
w	w	Small-letter w	
W	W	Capital W	
ω	ω	Small-letter omega	
ϖ	ϖ	Small-letter 'curly pi'	
φ	φ	Small-letter single-stroke phi	
ψ	ψ	Small-letter psi	
Ψ	Ψ	Capital psi	
x	x	Small-letter x	
X	X	Capital X	
χ	χ	Small-letter chi	
$\aleph$	$\aleph$	Aleph	

Table 2 — Characters and symbols similar in form

Handwritten	Typeset	Description	Notes
$\varkappa$	$\varkappa$	Small-letter 'curly kappa'	
$\times$	$\times$	Multiplication sign	
y	y	Small-letter y	
Y	Y	Capital Y	
γ	γ	Small-letter gamma	
Υ	Υ	Capital upsilon	
z	z	Small-letter z	
Z	Z	Capital Z	
2	2	Numeral two	
θ	θ	Small-letter theta	
Θ	Θ	Capital theta	
ϑ	ϑ	Small-letter 'curly theta'	
π	π	Small-letter pi	
Π	Π	Capital pi	
$\sqcap$	$\prod$	Product sign	
Σ	Σ	Capital sigma	
$\sum$	$\sum$	Summation sign	
$\emptyset$	$\emptyset$	Empty set, null set	
Ø	Ø	Slashed zero	
ϕ	ϕ	Small-letter phi	
Φ	Φ	Capital phi	
$'$	$'$	Prime	Apostrophe should be typed for prime
^{1}	^{1}	Superior one	
,	,	Comma	In handwritten formulae, the comma should be distinguished from inferior one and prime from superior one
$_1$	$_1$	Inferior one	
.	.	Decimal point	Position should be specified
$\cdot$	$\cdot$	Multiplication point	

Table 2 — Characters and symbols similar in form

Handwritten	Typeset	Description	Notes
-	/ –	Minus sign	
-	-	Hyphen	
-	/ –	En rule (dash)	
—	⁄ —	Em rule (dash)	

B.2 Additional remarks

B.2.1 *Relation symbols*

The user should confirm that any differences in usage are intended. In typescript, a single space should be left before and after relation symbols such as the following.

$= \quad \leqslant \quad \in \quad \subset \quad \triangleq \quad \simeq \quad \sim \quad \approx \quad \neq \quad \lessgtr \quad \geqslant \quad \cong \quad \gtreqqless \quad \leqq$

B.2.2 *Operator symbols*

In typescript, a single space should be left before and after operator symbols such as the following.

$\times \quad - \quad \div \quad + \quad \vee \quad \wedge$

B.2.3 *Crossed symbols*

Certain symbols may require a marginal confirmation of intention, to avoid ambiguity. For example:

$\hbar$	('h cross': normalized Planck's constant)	may be read as ⁄h (delete h);
$\neq$	(not equal to)	may be read as ≠ (delete equals sign);
$\emptyset$	(empty set)	may be read as ∅ (delete zero);
#	(hache or hash)	may be read as ⫽ (delete parallel);
		or # (former symbol for space);
ƶ	(to distinguish from numeral 2)	may be read as ⁄z (delete z).

Publications referred to

BS 5261, *Copy preparation and proof correction.*

BS 5261-1, *Recommendations for preparation of typescript copy for printing.*

BS 5261-2, *Specification for typographic requirements, marks for copy preparation and proof correction, proofing procedure.*

BS 5775, *Specification for quantities, units and symbols.*

BS 5775-11, *Mathematical signs and symbols for use in the physical sciences and technology.*

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