



Universal Multiple Octet Coded Character Set
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Doc Type: Working Group Document
Title: Additional Mathematical Characters
Source: Asmus Freytag
Status: Expert contribution
Action: For consideration by JTC1/SC2/WG2 and UTC
Related: N2590, N2676

People from the mathematical publishing community have recently reviewed document N2676. We have received a request for two additional character pairs beyond the characters submitted in N2590. The characters are

	2B14	BOUNDED SUPERSET
	2B15	BOUNDED SUBSET

The subset is attested in the following source – see the sample at the end of this paragraph. As mathematical notation is regular in this instance, the use of one character implies the existence of the other. When contacted, the author of the sample document confirmed that the corresponding superset does exist in principle, but explained that he had not needed it for the particular work. Nevertheless it should be encoded.

31 bounded

(bounded subset of a topological vector space)

- 1: X topological vector space
- 2: $A \subset X$
- 3: $\forall U \in \mathcal{U} : 0 \in U \rightarrow \exists s \in \mathbb{R} : s > 0 \ \& \ \{\forall t > s : A \subset tU\}$

From page 14 of Conradi et al

Unicode properties: the Unicode character properties of these are to be the same as for SUBSET and SUPERSET.

{	2B16	LEFT S-SHAPED BAG DELIMITER
}	2B17	RIGHT S-SHAPED BAG DELIMITER

The second pair of proposed characters is a set of s-shaped delimiters used as bag delimiters. These characters were already known when N2590 was drafted, but were not added due to time constraints.

The bag delimiters are attested as follows:

- γ: ∂f transverse to Z on U
- ⊂: $\exists g : X \rightarrow Y$ smooth : g transverse to Z & ∂g transverse to Z & $\{\exists D \supset C_{\text{open}} : g|_D = f\}$

Page 145 of Conradi et al.

Unicode properties: The Unicode character properties are to be the same as for other math delimiters.

Proposal summary form: These belong in the same set as characters as proposed in document N2590. The proposal summary form of document N2590 is hereby modified to increase the character count by 4. All other entries apply unchanged.

References

Joseph Conradi, et al., APM-Xi 1.0.2,
 Available online at: <http://www.ma.utexas.edu/~jcorneli/h/Xi.pdf>