$$\langle \langle \langle a,b \rangle, \langle c,d \rangle \rangle$$

$$(A \times B) \times (C \times D)$$

$$br_{A,B,C \times D}$$

$$(A \times B) \times (C \times D)$$

$$br_{A,B,C \times D}$$

$$(A \times (B \times (C \times D))) \quad \langle a, \langle b, \langle c,d \rangle \rangle \rangle$$

$$(A \times (B \times C)) \times D$$

$$(A \times (B \times C)) \times D$$

$$br_{A,B,C} \times Id_{D}$$

$$(A \times (B \times C)) \times D$$

$$br_{A,B,C,D}$$

$$(A \times (B \times C)) \times D$$

$$br_{A,B,C,D}$$

$$\langle \langle a, \langle b,c \rangle, d \rangle$$

$$\langle \langle a, \langle b,c \rangle, d \rangle$$