



$$\partial(M \times N) \cong (\partial M \times N) \cup (M \times \partial N)$$

$$\begin{aligned} \partial(S^1 \times D^3) &= (\partial S^1 \times D^3) \cup (S^1 \times \partial D^3) \\ &= S^1 \times S^2 \end{aligned}$$

$$\begin{aligned} \partial(D^2 \times S^2) &= (\partial D^2 \times S^2) \cup (D^2 \times \partial S^2) \\ &= S^1 \times S^2 \end{aligned}$$