Take for example :
$A = [0,2]$ and $B = [1,3].$
We have $\mathbb{R} \setminus (A \cap B) = \mathbb{R} \setminus [1,2]$
and $(\mathbb{R} \setminus A) \cap (\mathbb{R} \setminus B) = \mathbb{R} \setminus [0,3].$