= X and A ? B =
U ? V , which is contractible by construction . The reduced version of the sequence then yields (by exactness)
<formula>
for all dimensions n . The illustration on the right shows X as the sum of two 2 @-@ spheres K and L. For this specific case , using the result from above for 2 @-@ spheres , one has
<formula>

= = = Suspensions = = =

If X is the suspension SY of a space Y , let A and B be the complements in X of the top and bottom ' vertices ' of the double cone , respectively . Then X is the union A ? B , with A and B contractible . Also , the intersection A ? B is homotopy equivalent to Y. Hence the Mayer ? Vietoris sequence yields , for all n ,
<formula>
The illustration on the right shows the 1 @-@ sphere X as the suspension of the 0 @-@ sphere Y. Noting in general that the k @-@ sphere is the suspension of the (k ? 1) -sphere , it is easy to derive the homology groups of the k @-@ sphere by induction , as above .

= = Further discussion = =

= = = Relative form = = =

A relative form of the Mayer ? Vietoris sequence also exists . If Y ? X and is the union of C ? A and D ? B , then the exact sequence is :
<formula>

= = = Naturality = = =