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Because f is a covering map away from B, we can take a triangulation of S whose open cells are just the connected components of the inverse images of the open cells in our triangulation of S'.

「 For each point $p \in S' - B'$, we have an open set U_p evenly covered by f. We have a better situation here. We can choose an open set around any point in B' which are evenly covered by f. Note that the branch points set is finite. 」

Then if c_0, c_1, c_2 denote the number of 0-, 1-, and 2-cells in S', respectively, we will have $n \cdot c_1$ 1-cells and $n \cdot c_2$ 2-cells in S. Since for any $p \in S'$,

$$\sum_{q \in f^{-1}(p)} v(q) = n,$$

we see also that the number of distinct points

$$\#(f^{-1}(p)) = n - \sum_{q \in f^{-1}(p)} (v(q) - 1).$$

「 $$S \xrightarrow{f} S' \ni p \qquad q \in f^{-1}(p) \Rightarrow \sum_{q \in f^{-1}(p)} v(q) = n$$

$$\Rightarrow \sum_{q \in f^{-1}(p)} (v(q) - 1) = \sum_{q \in f^{-1}(p)} v(q) - \sum_{q \in f^{-1}(p)} 1$$

$$\sum_{q \in f^{-1}(p)} 1 = \#(f^{-1}(p)) = \#\text{ of distinct points}$$ 」