

196. Paul A. White: *On additive properties of compact sets.*

A property p^i concerned with i -dimensional Vietoris cycles of a compact set is called *additive* with respect to i if the following theorem is true. If the compact sets A and B have p^i and $A \cdot B$ has p^{i-1} , then $A \cdot B$ has p^i . It is shown that local i -connectedness and simple i -connectedness are two additive properties. Finally it is shown that the property $P(n, j)$ of being a compact, simply i -connected ($i=0, 1, \dots, m-2$) l^{n-2} embedded in E_n , having only simply- j -connected ($j \leq n-2$) generalized closed manifolds as boundaries of its complementary domains, is additive with respect to n and j simultaneously. (Received April 10, 1944.)

197. G. T. Whyburn: *Interior mappings into the circle.*

In this paper it is shown that any continuous transformation of a locally connected cyclic continuum M into the circle S is homotopic to an interior mapping of M into S . If M is not assumed to be cyclic, it is shown that any mapping $f(M) = S$ is homotopic to a mapping $\phi r(M) = S$ where $r(M) = M'$ is the monotone retraction of M onto the smallest A -set M' in M containing all cyclic elements on which f is essential and where $\phi(M') = S$ is interior. (Received April 14, 1944.)

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