



## ON THE AZULENOIDS WITH LARGE RING OF 5-GONS

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Deza and Grishukhin studied 3-valent maps  $M_n(p, q)$  consisting of a ring of  $n$   $q$ -gons whose inner and outer domains are filled by  $p$ -gons. They described the conditions on  $(n, p, q)$  under which such map may exist and presented several infinite families of them. The open cases are, in particular,  $M_n(7, 5)$  with  $n > 28$ ,  $M_n(5, 7)$  with  $n \in \{17, 18, 19\}$  and  $M_n(5, q)$  for  $q \geq 8$ . For the case  $M_n(7, 5)$ , we give all maps with  $n \leq 52$ . Moreover, we give a construction of maps  $M_{48+4k}(7, 5)$  for  $k \geq 0$  and  $M_{42+12k}(7, 5)$  for  $k \geq 0$ . We also construct maps with odd  $n$ ,  $n = 87$ . For all these maps we give also their symmetry groups. Among the maps we have found, there are several ones with non-isomorphic inner and outer domains, and, moreover, the one that has only trivial symmetry group.