

ON SOME CENTRE-LIKE SUBSETS OF RINGS

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ABSTRACT

For arbitrary rings R , let $F_r(R) = \{a \in R \mid |\{a, b\}^2| \leq 3 \text{ for all } b \in R\}$, and let $F_r^*(R) = \{a \in R \mid \text{for each } b \in R, \text{ either } [a, b] = 0 \text{ or } a^2 = b^2\}$. We study the properties of these sets for large classes of rings, and we provide sufficient conditions for these sets to coincide with the centre. Several examples are given.