1077-05-1852   **V. C. Mavron**, **T. P. McDonough** and **M. S. Shrikhande*** (`shrik1m@cmich.edu`),
Department of Mathematics, Central Michigan University, Mt. Pleasant, MI 48859. *On
quasi-symmetric designs with intersection difference three.*

In a recent paper, Pawale (Des Codes Cryptogr, 2010) investigated quasi-symmetric $2 - (v, k, \lambda)$ designs with intersection numbers $x > 0$ and $y = x + 2$ with $\lambda > 1$ and showed that under these conditions either $\lambda = x + 1$ or $\lambda = x + 2$, or D is a design with parameters given in the form of an explicit table, or the complement of one of these designs. In this paper, quasi-symmetric designs with $y - x = 3$ are investigated. It is shown that such a design or its complement has parameter set which is one of finitely many which are listed explicitly or $\lambda \le x + 4$ or $0 \le x \le 1$ or the pair (λ, x) is one of $(7, 2), (8, 2), (9, 2), (10, 2), (8, 3), (9, 3), (9, 4)$ and $(10, 5)$. It is also shown that there are no triangle-free quasi-symmetric designs with positive intersection numbers x and y with $y = x + 3$. (Received September 21, 2011)