

Ibrahim Mustafa, 5779 Quicksilver Cir, Las Vegas, NV 89110

A General Approach Leading To Typical Results

Introduction. Notations. In this paper, we show that if Φ is a closed subfamily of the bounded Darboux Baire 1 functions, and if Φ is closed with respect to the addition of a continuous, piecewise linear function, then many of the properties known to be typical in bounded Darboux Baire 1 are also typical in Φ .

We shall see, in Lemma A2, that the subfamilies of bounded Darboux Baire 1 functions satisfying the above conditions include the families of continuous functions, bounded Darboux upper semi-continuous functions, bounded Darboux lower semi-continuous functions, bounded derivatives, and the bounded Zahorski classes. These families will be denoted by \mathcal{C} , $b\mathcal{D}usc$, $b\mathcal{D}lsc$, $b\Delta$, and $b\mathcal{M}_i$ ($i=1,2,\dots,5$), respectively. Note that $b\mathcal{M}_1 = b\mathcal{D}\mathcal{B}_1$ ([10]), we will use either notation for this class. Various properties have been shown to be typical in some of these families, see [3], [4], [5], [6], [7], [8], and [9].

Throughout, we assume that all functions are defined on the closed unit interval $[0,1]$, which is denoted by I . Each of the above mentioned families is a Banach space with norm $\|f\| = \sup|f|$. For any function f , $Gr(f)$ and $C(f)$ denote, respectively, the graph of f and the continuity points of f . For any set A , $f|A$ denotes the restriction of f to A . The closure and interior of A are denoted by clA and $IntA$,