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1003-26-181      **Donald P. Minassian\*** ([dminassi@butler.edu](mailto:dminassi@butler.edu)), Dep't of Mathematics and Actuarial Science,  
Butler University, 4600 Sunset Ave., Indianapolis, IN 46208. *Continuity/Discontinuity on Dense  
Subsets of the Reals.*

Let  $f$  be a real-valued function on the real line,  $\mathbb{R}$ . Although no such  $f$  is continuous precisely on a countable, dense subset of  $\mathbb{R}$ , there exist a subset  $L$ , dense in  $\mathbb{R}$  and of measure zero, and an  $f$  continuous precisely on  $L$ . Also, there exist an  $f$  and two uncountable, dense (in  $\mathbb{R}$ ) subsets  $A$  and  $B$  whose union is  $\mathbb{R}$ , where  $f$  is (1) continuous but nowhere differentiable on  $A$  and discontinuous on  $B$ , or (2) differentiable on  $A$  and discontinuous on  $B$  [the same  $A$  and  $B$  as for (1)]. Apparently, (2) can be extended to higher degrees of differentiability on  $A$ . (Received August 19, 2004)