1046-60-745 **George P Yanev*** (yanevgp@utpa.edu), Department of Mathematics, The University of Texas - Pan American, 1201 W. University Drive, Edinburg, TX 78539. *Is the distribution exponential when the record median equals the record midrange, on average?*

Consider a sample of record values $X(1), X(2), \ldots, X(m)$. We study characterizations of exponential and related distributions in terms of the regression of one record value with two other record values as covariates, i.e., for $1 \leq k \leq n-1$ and $r \geq 1$

$$E[\psi(X(n))|X(n-k) = u, X(n+r) = v] \qquad (l_F < u < v < r_F),$$

where $\psi(x)$ satisfies certain regularity conditions and l_F and r_F are the extremity points of the underline absolutely continues distribution function F.

As a corollary of our main result we prove that F is exponential iff for $2 \leq k \leq n-1$

$$E[X(n)|X(n-k) = u, X(n+2) = v] = \frac{2u + kv}{k+2} \qquad (l_F < u < v < r_F).$$

Setting $k = 2$ above, we give an affirmative answer to the question in the title when the sample size is $m = 5$.

The obtained results compliment those in Yanev, G.P., Ahsanullah, M., and Beg, M.I. Characterizations of probability distributions via bivariate regression of record values. Metrika, 68(2008), 1:51-64. (Received September 10, 2008)