Rex H. Wu
Brooklyn, NY
RexHWu@aol.com

Solution to Problem 1059.

*Proof:* Since $X = 2^{p-1}(2^p - 1)$ with $p$ and $(2^p - 1)$ prime, the number of factors for $X$ is $\tau(X) = 2p$. Furthermore, suppose $d$ is a factor of $X$, then $X/d$ is also a factor of $X$. $\tau(X) = 2p$ implies there are $p$ pairs of factors $d$ and $X/d$ such that $d \cdot X/d = X$. Therefore,

$$\prod_{d|X} d = X^p.$$

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