

1145-VS-251 **Alfred S Beebe*** (axbeebe@salisbury.edu), Department of Mathematics & Computer Science,
Salisbury University, Salisbury, MD 21801. *Pythagorean Triples*. Preliminary report.

New formulas for all reduced Pythagorean triples are derived in the spirit of Dickson's Method, using the differences between the hypotenuse and the legs. Every pair of relatively prime natural numbers F, G , with G odd, corresponds to a unique reduced Pythagorean triple a, b, c , ($a^2 + b^2 = c^2$) given by $a = G^2 + 2FG, b = 2F^2 + 2FG, c = G^2 + F^2 + 2FG$. Classical 3, 4, 5 divisibility properties of the sides are examined and an alternate proof of Hall's generation of all reduced Pythagorean triples from (3, 4, 5) is given using these formulas. (Received August 24, 2018)