1056-00-1232 **Robert M. Sulman*** (rsulman@centralmethodist.edu), Central Methodist University, Fayette, MO 65248. *Disruption of Symmetry Creates New Symmetries.* Preliminary report.

The quadratic f(x)=ax^2+bx+c (a>0) has symmetry about a vertical line. When we divide f by g(x)=px^2+qx+r (p>0) the symmetry above is disrupted. However, new symmetries are created and they are examined in this talk. Specifically, the graph of h=f/g will always have a minimum value y = m and a maximum value y = M when disc(g) is negative and the axes of symmetry of f and g are different. If this is the case, then: (i) Mm=disc(f)/disc(g) (ii) Mm=β(f)/min(g), where β is the horizontal asymptote of h and y=min(f),y=min(g) are the minimum values of f and g (occurring at each vertex). As a consequence of (ii) we see that if either graph(f) or graph(g) are translated horizontally (not to share axis of symmetry), the resulting rational function will have a minimum and maximum value whose product is Mm. That is, the product of extreme values is invariant under horizontal shifts of the numerator and denominator. A look at what this means geometrically and some concrete examples are given. This result is derived solely using methods of Pre-Calculus and is thus accessible to anyone with such background. (Received September 21, 2009)