

1106-VX-1151 **Leah E Vaughan***, 60 South Lincoln Street, Washington, PA 15301, and **Roman Wong**, 60 South Lincoln Street, Washington, PA 15301. *Orbit of the Transformation*

$$T(x, y) = (y + \frac{1}{x}, x + \frac{1}{y}).$$

In this paper, we analyze the orbit of the transformation $T(x, y) = (y + \frac{1}{x}, x + \frac{1}{y})$ from any initial point (x_0, y_0) on the plane except at points on the axes. Different trends are observed depending on the location of the initial point (x_0, y_0) . We showed that except for some special points where the orbits become cyclic, all the other orbits are either a line or two lines tending to infinity in different fashions. The observed linear trends extend infinitely with slopes relative to the initial point. We support the analysis by illustrating the orbits graphically from Excel. (Received September 11, 2014)