

1077-VG-1098 **Kenneth H Luther*** (ken.luther@valpo.edu), 1900 Chapel Drive, Department of Math & CS,
Valparaiso, IN 46383. *A Boundary Value Problem for a Doublet.*

In mathematical models involving of a flux or velocity vector field, we often solve problems by developing a scalar potential function whose gradient is that vector field, and casting known conditions in terms of the potential function. A doublet (or dipole) is a recurring character in electromagnetism and fluid dynamics models whose potential function can be derived by allowing a point source and point sink to approach each other in a limiting process, and this is often the way that potential function is derived. It is rarer to see the potential function for a doublet derived as the solution to a boundary value problem. We will show a boundary value problem whose solution is the potential function for a two-dimensional doublet, and solve it using two different methods. (Received September 16, 2011)