

# Download Ordinary & Partial Differential Equation

In mathematics, an ordinary differential equation (ODE) is a differential equation containing one or more functions of one independent variable and the derivatives of those functions. The term ordinary is used in contrast with the term partial differential equation which may be with respect to more than one independent variable. In mathematics, a partial differential equation (PDE) is a differential equation that contains beforehand unknown multivariable functions and their partial derivatives. PDEs are used to formulate problems involving functions of several variables, and are either solved by hand, or used to create a computer model. A special case is ordinary differential equations (ODEs), which deal with functions ... A partial differential equation (or briefly a PDE) is a mathematical equation that involves two or more independent variables, an unknown function (dependent on those variables), and partial derivatives of the unknown function with respect to the independent variables. The order of a partial differential equation is the order of the highest derivative involved. Some partial differential equations can be solved exactly in the Wolfram Language using `DSolve[eqn, y, x1, x2]`, and numerically using `NDSolve[eqns, y, x, xmin, xmax, t, tmin, tmax]`. In general, partial differential equations are much more difficult to solve analytically than are ordinary differential equations. They may sometimes be solved using a Bäcklund transformation, characteristics ...