Order, Naming Conventions

A vert important property of a numerical method is its **order**. The accuracy of the method is proportional to a power of the step size. And that power is called the order.

If h is the step size and p is the order, then the error made in one step is proportional to h^{p+1}. And the error made in traversing an entire interval is proportional to h^p. So this means, if you are using a method of order p, and cut the step size in half, you can expect the overall error to be reduced by factor of 2 to the p .

And this brings to the naming conventions in the functions in the MATLAB ODE suite. All the functions have name that are variations on theme ODEpq. That means that the method ODEpq uses methods of order p and q.