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# Ruge-Kutta 4th order solver

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```
function soln = RK45(eqn, h, y0, xi, xf)

xc = xi;
yc = y0;
soln = [xi, y0];

    while xc<xf
        k1 = eqn(yc);
        k2 = eqn(yc+k1*h/2);
        k3 = eqn(yc+k2*h/2);
        xc = xc+h;
        k4 = eqn(yc+k3*h);
        yc = yc + (k1+2*k2+2*k3+k4)*h/6;

        soln = [soln;xc,yc];
    end
end
```

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