

Given the following notation from your e-mail $dx-4y^3=0$

I **assume** this means $\frac{d}{dy}x(y) - 4 \cdot y^3 = 0$ or $x'(y) = 4y^3$

Lets us the Mathcad function Odesolve(a,b,N) where:

a = variable of integration,
b = terminal point of integration interval,
N = number of steps [optional]

For this problem, I'll let N = 100

Using the Odesolve block (**carefully note the syntax!**):

Given $x'(y) = 4 \cdot y^3$ $x(0) = 0$ $f := \text{Odesolve}(y, 5, 100)$

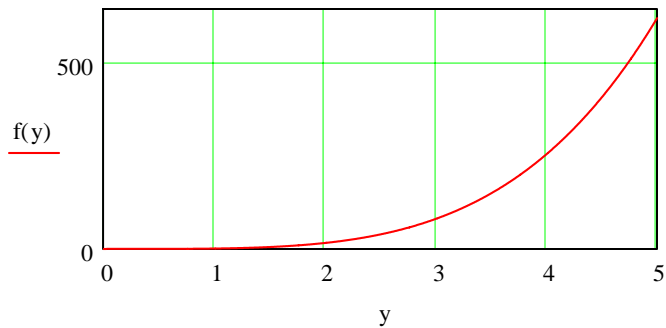
Note: this can be solved by separating the variables and integrating by hand thus:

$$dx(y) = 4 \cdot y^3 \cdot dy \quad \text{yielding: } x = g(y) = y^4 + c$$

so the solution (letting $c = 0$) is: $h(y) := y^4$

the solution graph is shown below:

Odesove Soluioin



Hand Solution

