**Name:**

**Task 1**

Here’s an algebraic relation between $x$ and $y$:

$$\frac{x^{3}}{y}+x\sin(y)= 2$$

Find $\frac{dy}{dx}$ using implicit differentiation.

**Task 2**

Compute the (exact) average value of the function $f\left(x\right)=e^{2x}$ on the interval $0<x<2$.