

# QUIZ 2

**Time: 15min**

---

1. Find the area under the curve  $y = x^3$  from 0 to 1 in two different ways:
  - (a) Use a Riemann sum to express the area as a limit, and compute this limit using the fact that the sum of the cubes of the first  $n$  integers is  $[\frac{n(n+1)}{2}]^2$ .
  - (b) State the fundamental theorem of Calculus, and use it to compute the area by means of antiderivatives.

*Each part is worth 5 points.*