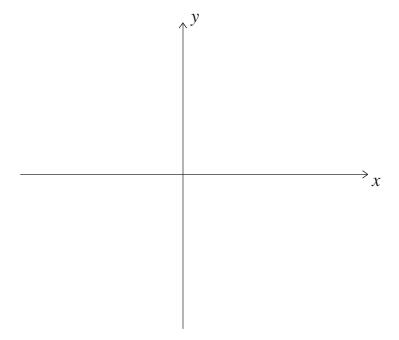
1. Calculate an approximation of $\int_{1}^{6} x^{2} dx$ by using the process in the definition of the integral with n = 5. Then calculate the exact value of the integral using the fundamental theorem of calculus.

2 Relying on the circle $x^2 + y^2 = 9$, sketch the graph of the function $f(x) = \sqrt{9 - x^2}$ in the space below.



Making use of this circle, evaluate $\int_0^3 \sqrt{9-x^2} \ dx$.