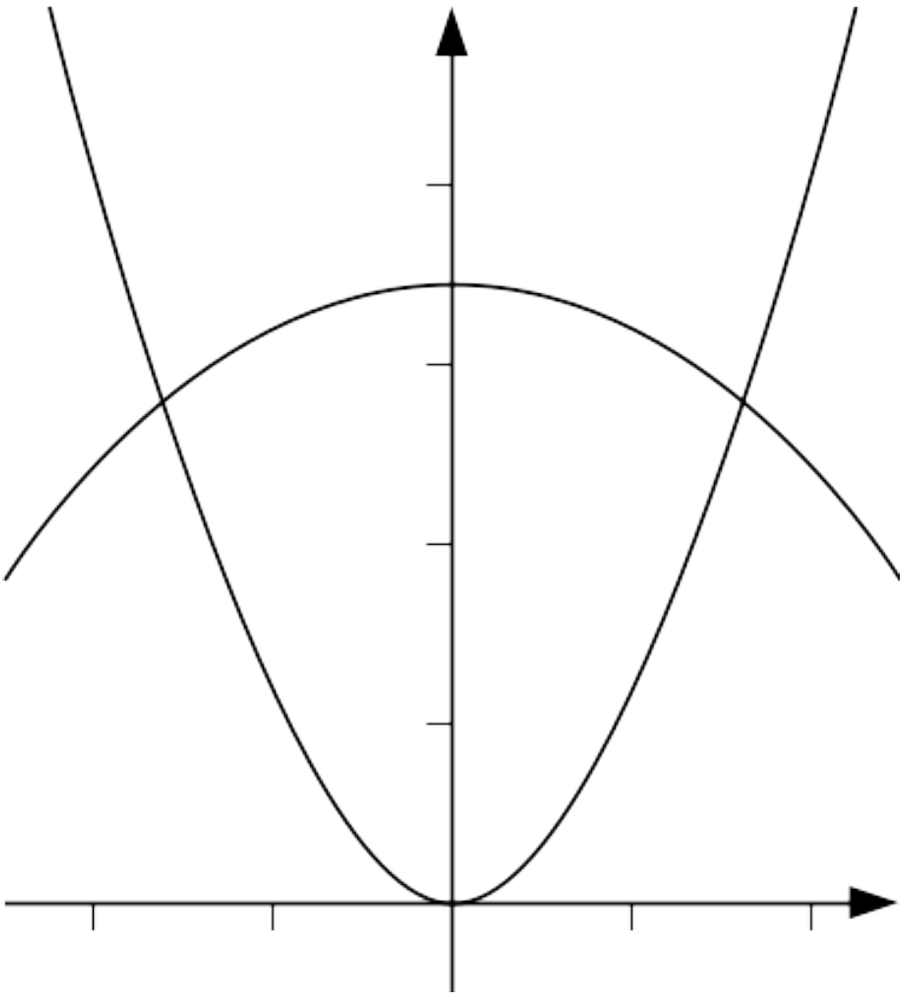
Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals
TRENT UNIVERSITY, Fall 2021

Assignment #6
An Area Problem
Due on Wednesday, 8 December.

1. Find the real number $a > 0$ such that the area of the finite region below the parabola $y = a - \dfrac{x^2}{4}$ and above the parabola $y = x^2$ is exactly $\dfrac{40}{3}$. *[5]*



Hint: This could be done entirely by hand. If you'd rather not, though, because some of the algebra is pretty painful, it is worth noting that `Sagemath` can integrate functions, both symbolically and numerically, and solve equations involving integrals.