

Homework 4

#1 Draw the picture that geometrically demonstrates integration by parts

#2 True or false (and explain)

- a) Euler factored the function $\sin x$
- b) Descartes discovered calculus
- c) Leibniz knew about Riemann sums
- d) The Pythagorean theorem is sometimes false
- e) Fermat invented modular forms
- f) If I see a triangle with 179° I must be living in the hyperbolic world
- g) An integral (like $\int_3^7 (x^3 + 4x) dx$) is fundamentally an antiderivative.

#3 Find the eccentricity, foci, and directrix of the curve given by $\frac{x^2}{100} + \frac{y^2}{36} = 1$