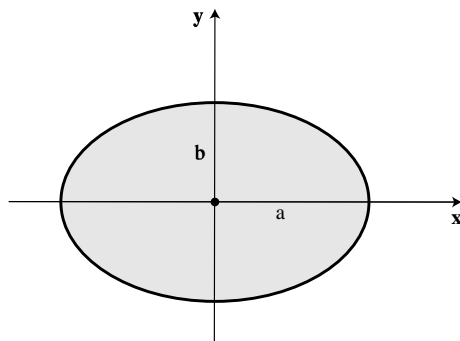


QUIZ 3

Time: 10min

1. Find the area of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.



Hints:

- (i) Solve for y to obtain a function corresponding to the top half of the ellipse.
- (ii) Use this function to express the area as an integral.
- (iii) Rewrite this integral by making the substitution $u = \frac{x}{a}$.
- (iv) Interpret the resulting integral as an area of a figure which you know.

Each part is worth 2.5 points.