

Math 1a – Quiz 13

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1. (6 points) Compute the following integrals.

(a)
$$\int_0^4 \frac{e^x}{e^x + 2} dx$$

(b)
$$\int_{-\pi/2}^{\pi/2} x^4 \sin x dx$$

2. (9 points) Consider the two curves $y = 2 - x^2$ and $y = x$. Let R be the region in the first quadrant bounded by the two curves and the y -axis.

(a) What is the area of the region R ?

(b) Set up (but do not evaluate) an integral to find the volume of the solid obtained by revolving R about the line $y = -2$.

(c) Set up (but do not evaluate) an integral to find the volume of the solid obtained by revolving R about the y -axis.