

Math 13 Worksheet #2: Double integrals over general regions

(1) Evaluate the double integral

$$\int_0^1 \int_0^{e^v} \sqrt{1+e^v} dw dv.$$

(2) Evaluate the double integral $\iint_D xy^2 dA$ where D is the region enclosed by $x = 0$ and $x = \sqrt{1-y^2}$.

(3) Evaluate the integral by reversing the order of integration.

$$\int_0^4 \int_{\sqrt{x}}^2 \frac{1}{y^3+1} dy dx$$