Problem 1

Let R be the triangle with vertices $\{(0,0),(1,1),(2,0)\}$. Compute $\iint\limits_{R} 2xy \ dA$.

Problem 2

Sketch the region of integration, reverse the order of integration and evaluate the integral:

$$\int_0^\pi \int_x^\pi \frac{\sin y}{y} \ dydx$$

Problem 3

Let R be the unit circle. Set up the double integral over R two different ways (one $dxdy$ and another $dydx$) for an arbitrary $f(x, y)$. (obviously, you don't need to solve these)

Problem 4

Compute: $\displaystyle\int_0^8 \int_{\sqrt[3]{x}}^2 \frac{dydx}{y^4 + 1}$ (hint: draw the region first and reverse the order of integration).