

1. Set up iterated integrals for both orders of integration and decide which order would be easier:  $\iint_D y^2 e^{xy} dA$  where  $D$  is the region bounded by  $y = x$ ,  $y = 4$ , and  $x = 0$ .

2. Set up iterated integrals for both orders of integration and decide which order would be easier:  $\iint_D xy^2 dA$  where  $D$  is the right half of the disk  $x^2 + y^2 \leq 1$ .

3. Evaluate the iterated integral  $\int_0^1 \int_x^1 \sin(y^2) dy dx$ .