

Exercise 1 Evaluate the double integral I over the region D

$$I = \iint (3xy^2 - x) dA \quad , \quad D = \{(x, y) : 0 \leq x \leq 1, 1 \leq y \leq 2\}$$

Exercise 2 Set up an integral (do not evaluate it!) for the volume of the solid whose base is the region in the xy -plane that is bounded by the parabola $y = 1 - x^2$ and the line $y = -2x - 2$, while the top of the solid is bounded by the surface $z = 20 - x^2 - y^2$, and sketch the base of the solid.