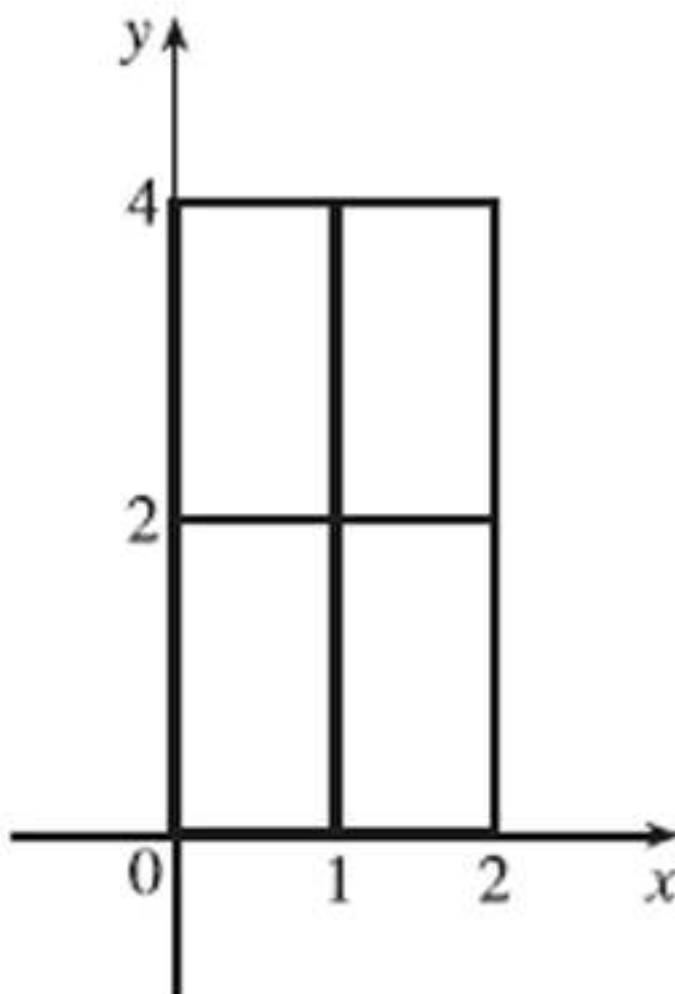(a) The subrectangles are shown in the figure.
The surface is the graph of $f(x, y) = 9x + 5y^2$ and $\Delta A = 2$, so we
estimate

$$V = \iint_R (9x + 5y^2)\, dA \approx \sum_{i=1}^{2} \sum_{j=1}^{2} f\left(x_{ij}^*, y_{ij}^*\right) \Delta A$$

$$= f(1, 0)\, \Delta A + f(1, 2)\, \Delta A + f(2, 0)\, \Delta A + f(2, 2)\, \Delta A$$

$$= 9(2) + 29(2) + 18(2) + 38(2) = 188$$

(b) $V = \iint_R (9x + 5y^2)\, dA \approx \sum\limits_{i=1}^{2} \sum\limits_{j=1}^{2} f(\overline{x}_i, \overline{y}_j)\, \Delta A$

$= f\left(\tfrac{1}{2}, 1\right) \Delta A + f\left(\tfrac{1}{2}, 3\right) \Delta A + f\left(\tfrac{3}{2}, 1\right) \Delta A + f\left(\tfrac{3}{2}, 3\right) \Delta A$

$= \tfrac{19}{2}(2) + \tfrac{99}{2}(2) + \tfrac{37}{2}(2) + \tfrac{117}{2}(2) = 272$