

R is the rectangle $[-3, 3] \times [0, 5]$. Thus, $A(R) = 6 \cdot 5 = 30$ and

$$\begin{aligned} f_{\text{ave}} &= \frac{1}{A(R)} \iint_R f(x, y) \, dA = \frac{1}{30} \int_0^5 \int_{-3}^3 3x^2y \, dx \, dy \\ &= 3 \cdot \frac{1}{30} \int_0^5 \left[\frac{1}{3}x^3y \right]_{x=-3}^{x=3} dy = (1/10) \int_0^5 18y \, dy \\ &= 9/5 \left[\frac{1}{2}y^2 \right]_0^5 = 45/2. \end{aligned}$$