

Problems 2-3 concern the integrals

$$(a) \int_R f(x, y) dA \quad (b) \int_R y dA \quad (c) \int_T y dA \quad (d) \int_R (x - x^2) dA$$
$$(e) \int_T (y - y^2) dA \quad (f) \int_L (x - x^2) dA \quad (g) \int_L (y + y^3) dA \quad (h) \int_R (2x + 3y) dA$$

Here  $R$  is the rectangle  $-1 \leq x \leq 1$ ,  $-1 \leq y \leq 1$ , and  $T$  is the top half  $-1 \leq x \leq 1$ ,  $0 \leq y \leq 1$ , and  $L$  is the left half  $-1 \leq x \leq 0$ ,  $-1 \leq y \leq 1$ .

Without evaluating them, decide which of the integrals are positive, which are negative, and which are zero.