

**Figure E.2** A simple example of the use of Lagrange multipliers in which the aim is to maximize  $f(x_1, x_2) = 1 - x_1^2 - x_2^2$  subject to the constraint  $g(x_1, x_2) = 0$  where  $g(x_1, x_2) = x_1 + x_2 - 1$ . The circles show contours of the function  $f(x_1, x_2)$ , and the diagonal line shows the constraint surface  $g(x_1, x_2) = 0$ .

