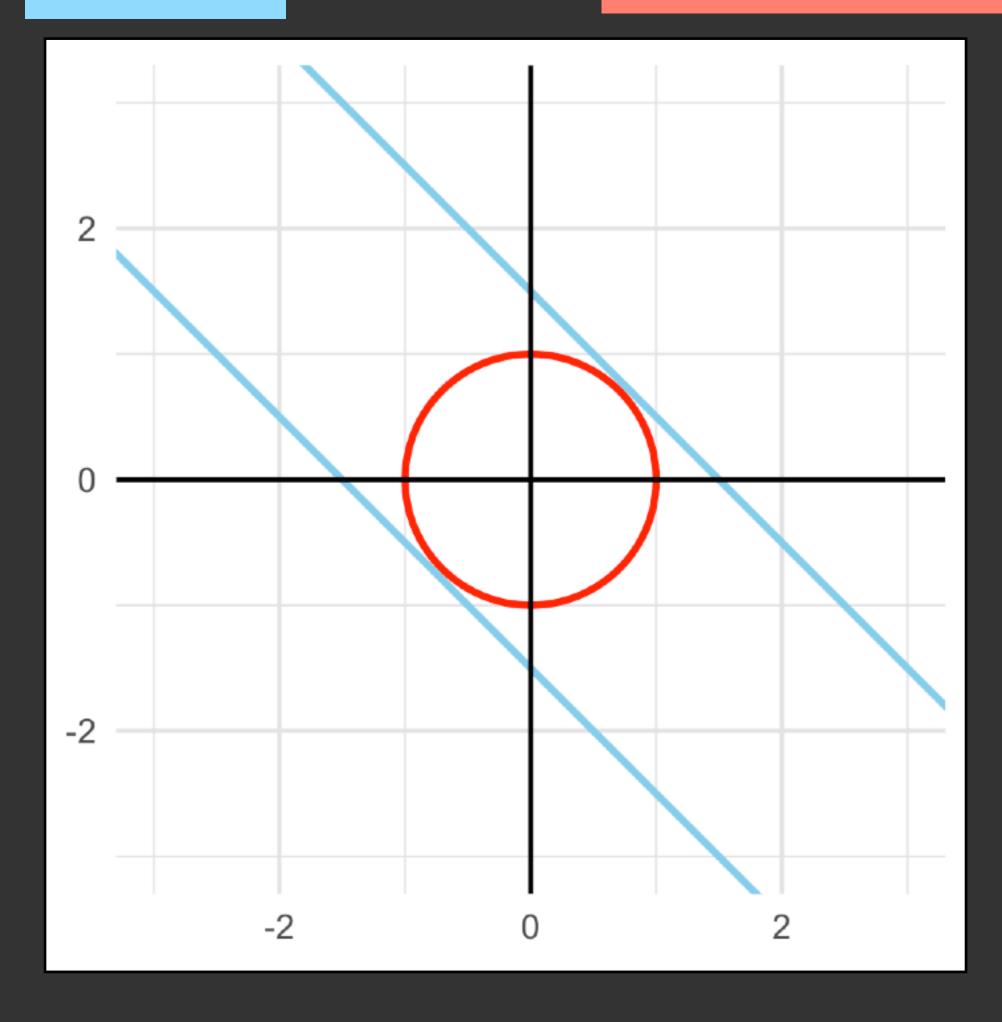
## for your awareness: constrained optimization

optimize f(x, y)

subject to 
$$g(x, y) = k$$



$$f(x, y) = 2x + y$$
  
 $g(x, y) = x^2 + y^2 = 1$