$F(x,y,z) = x^2 + y^2 + z^2 = r^2$
QvQ $\exists (x,y,z) \in \Re^3 : \boldsymbol{\nabla} F(x,y,z) = 0$
$\boldsymbol{\nabla} F(x,y,z) = (2x, 2y, 2z)$
$\boldsymbol{\nabla} F(x,y,z) = (2x, 2y, 2z) = (0,0,0) \Leftrightarrow (x,y,z) = (0,0,0)$