$$z = f(x,y) = x^2 + y^2$$

a.) $$\nabla f(x,y) = \left(\frac{\partial f}{\partial x}(x,y), \frac{\partial f}{\partial y}(x,y) \right)$$

$$= (2x, 2y)$$

b.) N_0 : $x^2 + y^2 = 0$

N_1 : $x^2 + y^2 = 1$

N_2 : $x^2 + y^2 = 2$

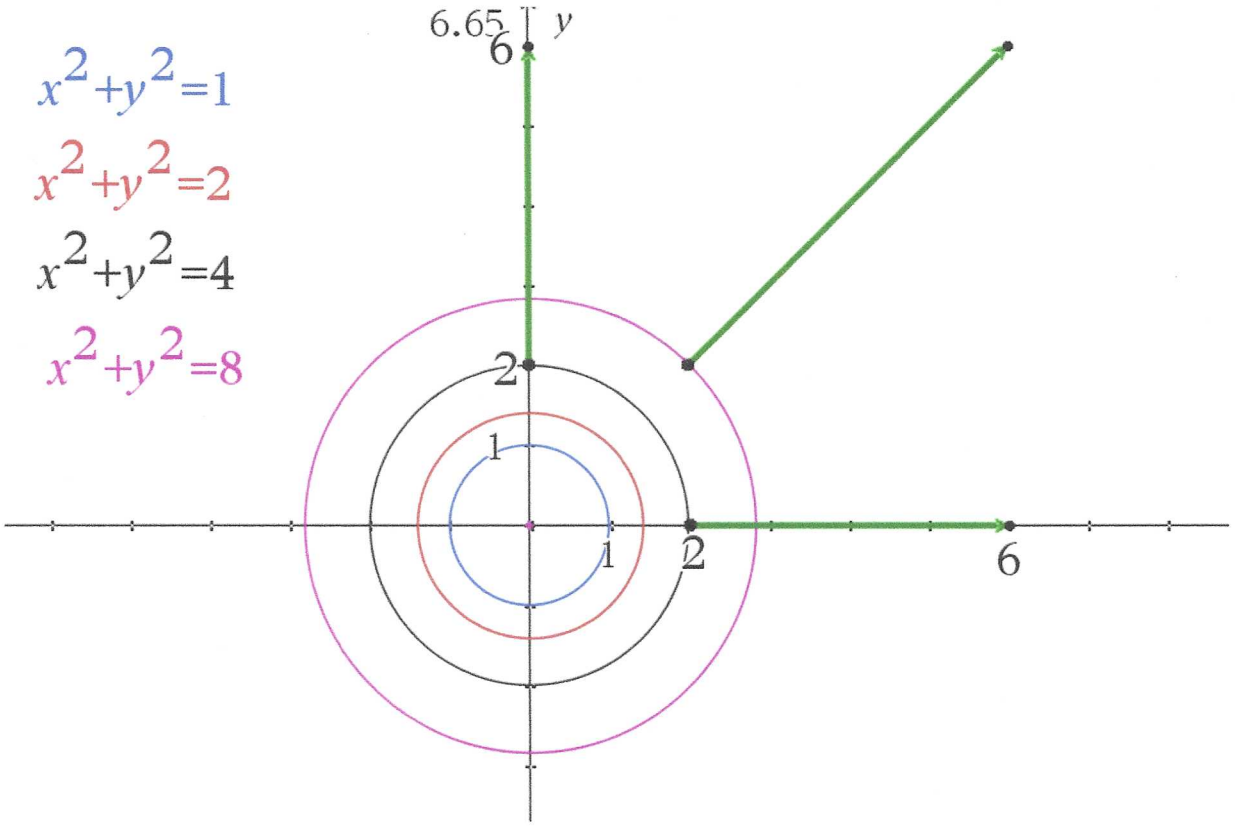
N_4 : $x^2 + y^2 = 4$ (bevat de punten $(2,0)$ en $(0,2)$)

N_8 : $x^2 + y^2 = 8$ (bevat het punt $(2,2)$)

$\nabla f(2,0) = (2.2, 2.0) = (4,0)$

$\nabla f(0,2) = (2.0, 2.2) = (0,4)$

$\nabla f(2,2) = (2.2, 2.2) = (4,4)$


$x^2+y^2=1$
$x^2+y^2=2$
$x^2+y^2=4$
$x^2+y^2=8$
6.65
y
6
2
1
1
2
6