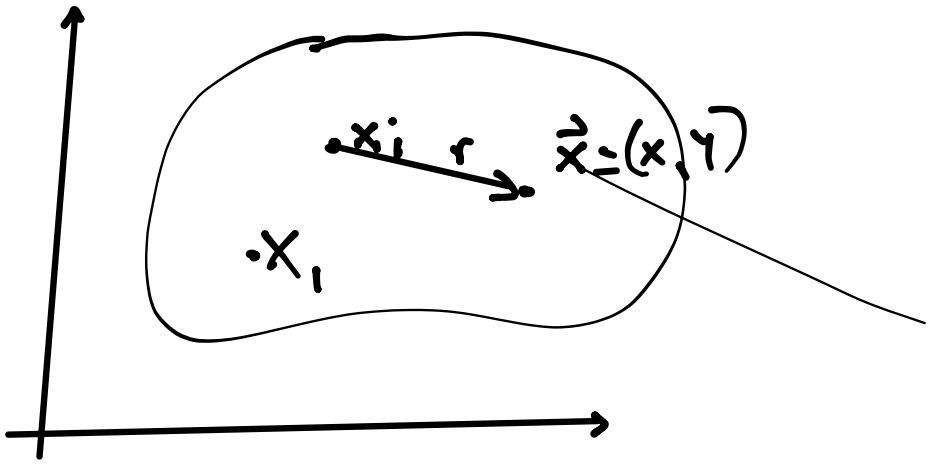
$r = \|\vec{x} - \vec{x}_i\|$

$f(r) = \sqrt{r^2 + c^2}$

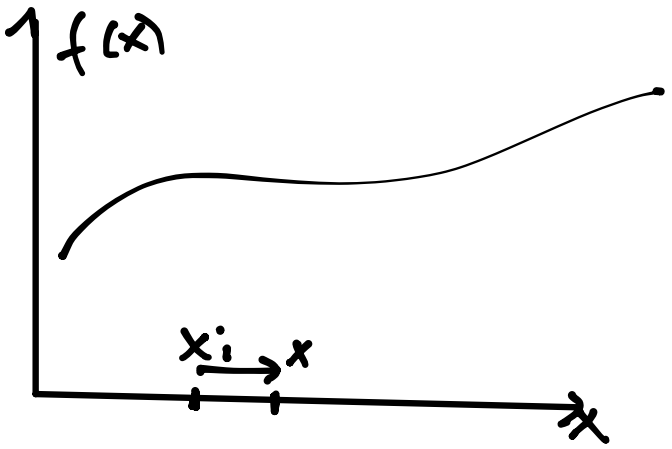
$f(r(\vec{x}))$



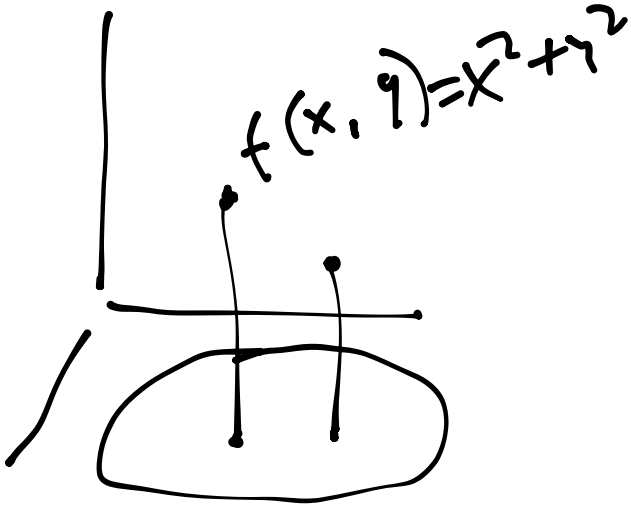
$f_1 \to f(\|\vec{x} - \vec{x}_1\|)$

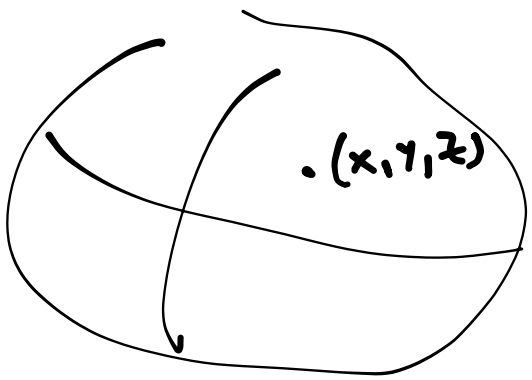
$f_2 \to f(\|\vec{x} - \vec{x}_2\|)$

$f(x, y, z)$



$r = |x - x_i|$

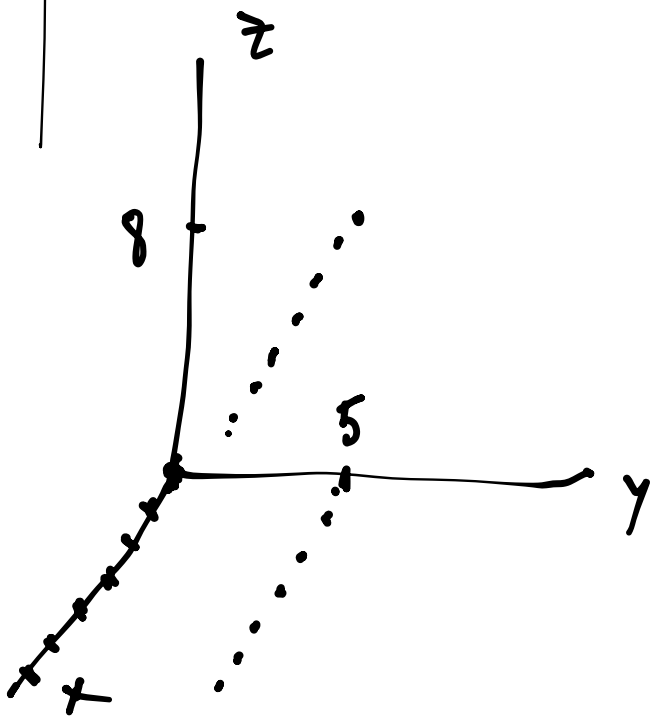


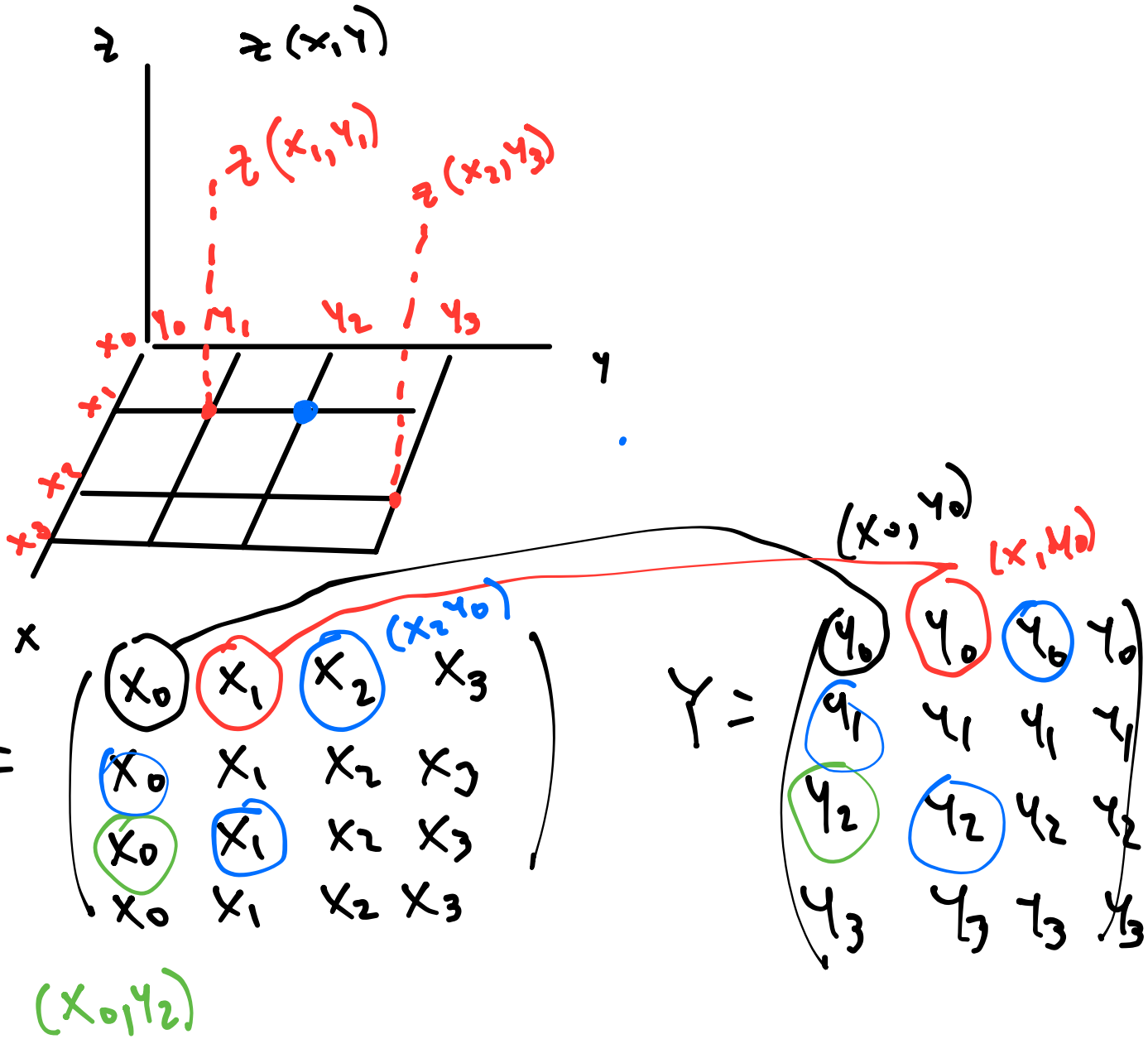


x	y	z	$f(x, y, z)$
.	.	.	x
.	.	.	x

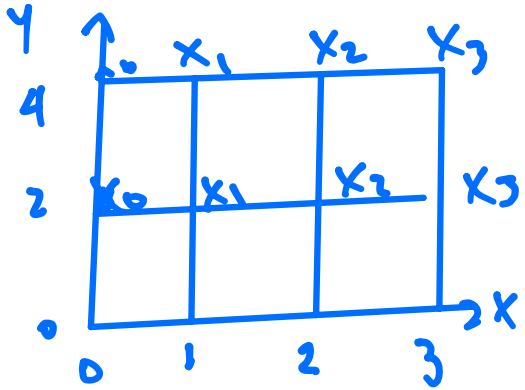
X	f(x)
.	x
.	x
.	x

X	Y	Z	f(x,y,z) = f(x,0,0)
0.1	0	0	
0.2	0	0	
0.3	0	0	



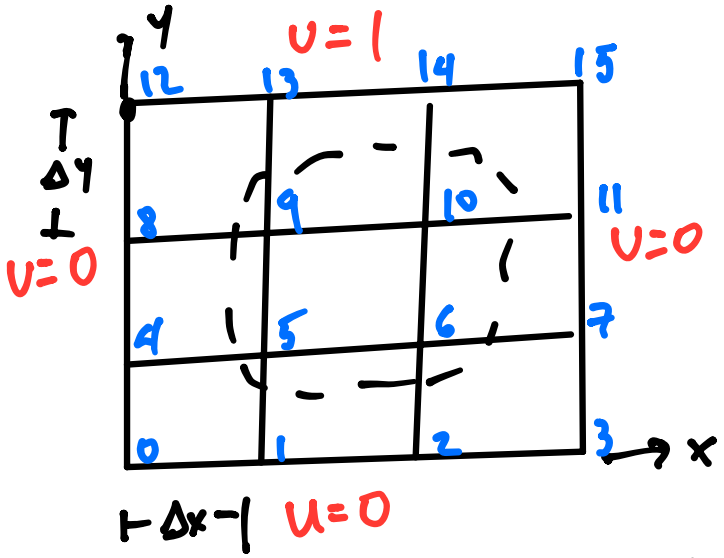


$$Z = \begin{pmatrix} f(x_0,y_0) & f(x_1,y_0) & f(x_2,y_0) & f(x_3,y_0) \\ f(x_0,y_1) & f(x_1,y_1) & f(x_2,y_1) & \cdots \end{pmatrix}$$

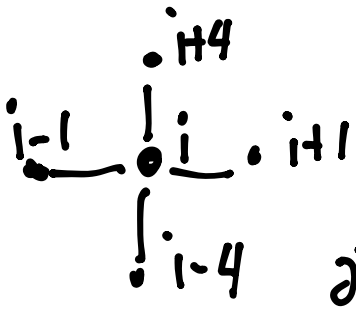


$$\nabla^2 u = 0$$

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$$



$i = 9, 10, 5, 6$



$$\frac{\partial^2 u}{\partial x^2} = \frac{u_{i+1} - 2u_i + u_{i-1}}{\Delta x^2}$$

$$\frac{\partial^2 u}{\partial y^2} = \frac{u_{i+4} - 2u_i + u_{i-4}}{\Delta y^2}$$

$$\frac{u_{i+1} - 2u_i + u_{i-1}}{\Delta x^2} + \frac{u_{i+4} - 2u_i + u_{i-4}}{\Delta y^2} = 0$$

$i = 0, 4, 3 \quad u_i = 0$

$i = 12, 13, 14, 15 \quad u_i = 1$

$i = 3, 7, 11 \quad u_i = 0$

$i = 1, 2 \qquad v_i = 0$