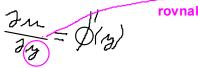
Nájdite analytickú funkciu: f:
$$A(C) \rightarrow C$$
, $f(z) = f(x + i y) = u(x,y) + i v(x,y)$, ak je daná funkcia $v: R \rightarrow R^2$, $v(x,y) = 2xy + 3x$

$$\frac{2x}{2x} = 2y + 3 = -\frac{3x}{2y} = -2y - 3$$

$$\frac{\partial N}{\partial y} = 2x = \frac{\partial n}{\partial x}$$

Príklad sa ďalej dá riešiť 2 rovnocennými spôsobmi.

$$\frac{2n}{2N} = 2x = \sum m(x_1y) = \int 2x dy = 2x^2 + \int (y) = x^2 + \int (y)$$
rovnaké premenné



$$M(x_{1}y)=X^{2}-y^{2}-3y+C$$

$$\frac{\partial n}{\partial y} = \frac{\partial n}{\partial y}$$

$$\frac{\partial^2 (n)}{\partial y} = -2 \times -3$$

$$\phi(y) = \frac{1}{\text{rovnáké premenné}} = \frac{1}{2} - 3y + C = -\frac{1}{2} - 3y + C = -\frac{1}{2} - 3y + C = -\frac{1}{2} - \frac{1}{2} -$$

$$f(z) = u(x_{1}y) + i v(x_{1}y) = x^{2} - y^{2} - 3y + (+ i(2xy + 3x)$$

$$\frac{2n}{49} = -2y - 3 = 2n(x_{12}) = 5(-2g - 3)dy = -2y^{2} - 3y + \phi(x) = -y^{2} - 3y + \phi(x)$$

rovnaké premenné

$$\frac{\partial n}{\partial x} = \phi'(x)$$

$$\oint (x) = 2 \times$$

$$\phi(x) = \int 2x \, dx = \frac{2x^2}{2} + C = x^2 + C$$

$$f(z) = M(x|3) + i N(x|3) = -3^2 - 33 + x^2 + C + i(2xy + 3x)$$

Nech
$$m: \mathbb{R}^2 \rightarrow \mathbb{R}$$
, $m(x_{1}y) = \chi^2 - y^2$

Nájdite harmonicky združenú funkciu $\mbox{$N$}:\ \mbox{$k^2$} \mbox{$>k}_{\mbox{j}}\ \ \mbox{takú, že v(0,0) = 0}$

Najskôr overíme, že u(x,y) je harmonická funkcia.

$$\frac{\partial n}{\partial x} = 2x - \frac{\partial n}{\partial y} \frac{\partial n}{\partial y} = -2y = -\frac{\partial n}{\partial x} \frac{\partial^2 n}{\partial x^2} + \frac{\partial^2 n}{\partial y^2} = 2 + (-2) = 0$$

$$\frac{\partial^2 n}{\partial x^2} = 2$$

$$u(x,y) \text{ je harmonická funkcia}$$

Dá sa to riešiť 2 rovnocennými spôsobmi

1. možnosť

$$\frac{\partial N}{\partial x} = 2y = N(x_1 y) = 52y Ax = 2yx + \phi(y)$$

$$\frac{\partial N}{\partial y} = 2x + \phi(y)$$

$$\frac{\partial N}{\partial y} = \frac{\partial N}{\partial y}$$

$$\frac{\partial N}{\partial y} = \frac{\partial N}{\partial y}$$

$$\frac{\partial N}{\partial y} = \frac{\partial N}{\partial y}$$

$$\frac{\partial N}{\partial y} = 0$$

$$\frac{\partial N}{\partial y} = 0$$

2. možnosť

$$\frac{\partial w}{\partial y} = 2x = \gamma w(x,y) = \int 2x dy = 2xy + \phi(x)$$

$$\frac{\partial w}{\partial x} = 2y + \phi(x)$$

$$\frac{\partial w}{\partial x} = \frac{\partial w}{\partial x}$$

$$v(0,0) = 0$$

 $v(x,y) = 2xy + 0$
 $v(0,0) = 2 \cdot 0 \cdot 0 + 0 = 0$

 $\phi(x) = C$

=> ~ (x14) = 2x4