

- (1.) Separáciou premenných $u(x,y) = f(x)g(y)$ nájdite riešenie rovnice
(3 BODY)

$$x^2 \frac{\partial^2 u}{\partial x \partial y} + y^2 u = 0, \quad u(x,0) = \exp\left(\frac{1}{x}\right)$$

- (2.) Nájdite riešenie $u(x,y)$ rovnice
(4 BODY)

$$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = u - xy, \quad u(2,y) = y^2 + 1$$

- (3.) Nájdite riešenie $u(x,y,z)$ rovnice
(4 BODY)

$$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + (x+y-z) \frac{\partial u}{\partial z} = 0, \quad u(x,1,z) = 2z$$

- (4.) Nájdite riešenie $u(x,y,z)$ rovnice
(4 BODY)

$$(x+z) \frac{\partial u}{\partial x} + (y+z) \frac{\partial u}{\partial y} + (x+y) \frac{\partial u}{\partial z} = 0,$$

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$$u(x,y,0) = \frac{(x+y)^2}{x-y}$$