$y''(x,y) = f(x,y)$ ОДУ 2-го порядка

$y(x_0) = y_0$

$y'(x_0) = y_0'$

$g(x,y) = y'(x,y)$

$g(x_0) = y'(x_0) = y_0'$

$$\begin{cases} g'(x,y) = y''(x,y) = f(x,y) & g(x_0) = y_0' \\ y'(x,y) = g(x,y) & y(x_0) = y_0 \end{cases}$$

$$g(x_{i+1} y_{i+1}) = g(x_i y_i) + h f(x_i y_i)$$

$$y(x_{i+1} y_{i+1}) = y(x_i y_i) + h g(x_i y_i)$$

$$g(x_1 y_1) = g(x_0 \overset{=y_0'}{y_0}) + h f(x_0 y_0) \quad \text{из ур-ния}$$

$$y(x_1 y_1) = y(x_0 \overset{=y_0}{y_0}) + h g(x_0 \overset{=y_0'}{y_0})$$

$$g(x_2 y_2) = g(x_1 y_1) + h f(x_1 y_1)$$

$$y(x_2 y_2) = y(x_1 y_1) + h g(x_1 y_1)$$