FDM-I

$$\frac{d^2y}{dx^2} = m^2y = 0.01y$$

$$with\ y(x = 0) = 1, \qquad y(x = 10) = 0$$

1   i-1   i   i+1   n
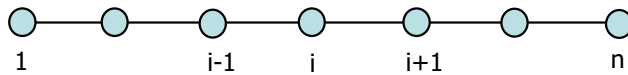
FDM-II

$$\left.\frac{d^2y}{dx^2}\right|_i = \frac{y(i+1) - 2y(i) + y(i-1)}{h^2}$$

The finite difference equation for node I is

$$\frac{y(i+1) - 2y(i) + y(i-1)}{h^2} - 0.01y(i) = 0$$

$$y(i+1) - (2 + 0.01h^2)y(i) + y(i-1)$$

Putting h = 2, we get
$$y(i+1) - (2 + 0.04)y(i) + y(i-1)$$

FDM -III

1	0					1
1	-2.04	1				0
	1	-2.04	1			0
		1	-2.04	1		0
			1	-2.04	1	0
				0	1	0

FDM-IV

0	1	0										1
1	1	-2.01	1									0
2		1	-2.01	1								0
3			1	-2.01	1							0
4				1	-2.01	1						0
5					1	-2.01	1					0
6						1	-2.01	1				0
7							1	-2.01	1			0
8								1	-2.01	1		0
9									1	-2.01	1	0
10										1	-2.01	1	0
											0	1	0