

**Differenciálegyenlet – Másodrendű – Hiányos, nincs  $y$**

1.  $y'' + y' \operatorname{tg} x = 0$ .
2.  $y'' - 2y' = x$ ,  $y(0) = -1/2$ ,  $y'(0) = -1$ .
3.  $x^2 y'' + 2xy' = \ln x$ ,  $y(1) = 0$ ,  $y'(1) = 2$ .
4.  $y'' + 2xy' + e^{-x^2} - x = 0$ ,  $y(0) = 0$ ,  $y'(0) = 1/2$ .
5.  $y'' + y' = e^{-x} + x + 2$ ,  $y(0) = -1$ ,  $y'(0) = 2$ .
6.  $x^2 y'' - (y')^2 + 2x^2 = 0$ ,  $y(0) = 1/2$ ,  $y'(1) = -1$ .
7.  $2y'' - (y')^2 + 4 = 0$ ,  $y(0) = 0$ ,  $y'(0) = 1/2$ .
8.  $y' + \ln y'' = 0$ ,  $y(1) = -2$ ,  $y'(1) = 0$ .

**Differenciálegyenlet – Másodrendű – Hiányos, nincs  $x$ , van  $y$**

1.  $yy'' = 2(y')^2 - 2y'$ ,  $y(0) = 1$ ,  $y'(0) = 2$ .
2.  $y'' = e^y$ ,  $y(0) = 0$ ,  $y'(0) = -\sqrt{2}$ .
3.  $y^2 y'' = 1$ ,  $y(0) = -2$ ,  $y'(1) = 1$ .
4.  $yy'' + (y')^2 = y^2$ ,  $y(0) = 2$ ,  $y'(0) = -\sqrt{2}$ .

**Differenciálegyenlet – Másodrendű – Lineáris, konstans együtthatós**

1.  $y'' + y' - 2y = \sin 2x$ .
2.  $y'' + 3y' + 2y = e^{-x}$ ,  $y(0) = -2$ ,  $y'(0) = -2$ .
3.  $y'' - 4y = e^{-2x}$ ,  $y(0) = 1$ ,  $y'(0) = -2$ .
4.  $y'' - 2y' = x$ ,  $y(0) = -1/2$ ,  $y'(0) = -1$ .
5.  $y'' + y' = e^{-x} + x + 2$ ,  $y(0) = -1$ ,  $y'(0) = 2$ .
6.  $y'' - 4y' + 4y = e^{3x}$ .
7.  $y'' + 2y' + y = e^{-x} + 1$ ,  $y(0) = 2$ ,  $y'(0) = 3$ .

8.  $y'' - y' + y = 2x^3 + 3x + 1.$

9.  $y'' + 4y = \sin 2x - 1, \quad y(0) = 1, \quad y'(0) = 2.$

10.  $y'' - 4y' + 13y = e^{2x} \cos 3x.$