

Gyakorló feladatok megoldásai - 1.

MA1222i

1. (a) $3y^2 - 2x^3 = c, \quad y \neq 0$
(c) $3y^2 - 2 \ln |1 + x^3| = c, \quad x \neq 1, y \neq 0$
(e) $y^2 - x^2 + 2(e^y - e^{-x}) = c, \quad y + e^y \neq 0$
(g) $y = \sin(\ln |x| + c)$, ha $x \neq 0$ és $|y| < 1$, valamint $y = \pm 1$, ha $x \neq 0$ és $|y| < 1$
2. (a) $y = \sqrt{-2xe^x + 2e^x - 1}$
(c) $y = (3 - 2\sqrt{1+x^2})^{-1/2}, \quad |x| < \frac{1}{2}\sqrt{5}$
(e) $y = -\sqrt{\frac{x^2+1}{2}}, \quad -\infty < x < \infty$
(g) $y = \operatorname{tg}(2x + x^2), \quad |x+1| < \sqrt{1+\pi/2}$
3. (a) $y = ce^{-3x} + \frac{x}{3} - \frac{1}{9} + e^{-2x}$
(c) $y = \frac{c}{x} + \frac{3 \cos 2x}{4x} + \frac{3 \sin 2x}{2}$
(e) $y = x^2 e^{-x^2} + ce^{-x^2}$
(g) $y = (c - 2x \cos x + 2 \sin x) \cos x$
4. (a) $y = (x+2)e^{2x}$
(c) $y = \frac{\sin x}{x^2}, \quad x > 0$
(e) $y = \frac{2x+\pi}{\sin x} - 2 \cos x, \quad -\pi < x < 0$
(g) $y = e^{-x} \int_0^x \frac{e^t}{1+t^2} dt, \quad -\infty < x < \infty$