November 22, 2023

$$1.(x+2iy)dx - xdy = 0,$$

$$2.xy'(x) = y(x) - x^j e^{\frac{y(x)}{x}},$$

$$3.xy^j dx = (y^j + \frac{1}{2}x^2 j y^{j-1} + x^2)dy,$$

$$4.y = 2xy' - (y')^j,$$

$$5.y'' + y = xsin(jx), y(0) = 0, y'(0) = 1,$$

$$6.y'' - \frac{2j^2 y}{cos^2(jx)} = 0, y_1(x) = tg(jx),$$

$$7.z_1(x) = e^{2jx}cos(jx), \quad z_2(x) = e^{2jx}sin(jx)$$