Вариант 15.

1. $y' \sin x = y \ln y$
2. $\left(y^2 + 2xy\right) dx + x^2 dy = 0$
3. $y' - y \operatorname{tg} x = \frac{x^4}{\cos x}$
4. $(x+1)\left(y' + y^2\right) = -y, y(0) = 1$
5. $\left(x^3 - 3xy^2 + 2\right) dx - \left(3x^2 y - y^2\right) dy = 0$
6. $x^2 y'' + xy' = 2, y(1) = 1, y'(1) = 0$
7. $3yy'' - (y')^2 = 0$
8. $y'' - 5y' + 6y = 0, y(0) = 0, y'(0) = 3$
9. $y''' + 2y'' + 2y' + y = 0$
10. $y'' - 5y' = 5e^{5x} + 2$
11. $y'' - 5y' + 4y = \cos x + 3 \sin x$
12. $y'' + y = 5 \sin x$
13. $y'' + 4y' + 4y = xe^{-2x} + e^x \cos 2x$
14. $y'' + y = 4 \operatorname{tg} x$
15. $y^{(V)} + y''' = 1$