Вариант 4.

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