Вариант 8.

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