Вариант 1.

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