Вариант 3.

1. $(1 + e^x)yy' = e^x$

2. $xy' = \sqrt{x^2 - y^2} + y$

3. $xy' + y = \ln x + 1$, $y(1) = 3$

4. $x^2 y' + y^2 = yx$

5. $(\sin y + y \sin x + \frac{1}{x})dx + (x \cos y - \cos x + \frac{1}{y})dy = 0$

6. $2xy'' - y' = 0$

7. $y'' = e^{2y}$, $y(0) = 0$, $y'(0) = 1$

8. $y'' - 5y' + 4y = 0$, $y(0) = 6$, $y'(0) = 9$

9. $y''' + 16y' = 0$

10. $y'' - 3y' = xe^{3x} + 1$

11. $y'' + 4y' = \sin x$

12. $y'' + 4y = 2\sin 2x - 3\cos 2x$

13. $y'' - 2y' + 2y = 4xe^x(\sin x + 2)$

14. $y'' - 2y' + y = \frac{8e^x}{x}$

15. $y^{(IV)} - 4y = 2\sin x$