Вариант 20.

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