Вариант 17.

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