17. $y''_{xx} + f(y)y'_x + g(y) = 0.$

Lienard equation. The substitution $w(y) = y'_x$ leads to a first-order equation: $ww'_y + f(y)w + g(y) = 0.$

Reference

Polyanin, A. D. and Zaitsev, V. F., *Handbook of Exact Solutions for Ordinary Differential Equations, 2nd Edition* , Chapman & Hall/CRC, Boca Raton, 2003.

