

7.
$$y_{xx}^{"} = x^{-3}f(yx^{-1})$$
.

The transformation $\xi = 1/x$, w = y/x leads to an autonomous equation of the form 3.1: $w_{\xi\xi}'' = f(w)$.

References

Kamke, E., Differentialgleichungen: Lösungsmethoden und Lösungen, I, Gewöhnliche Differentialgleichungen, B. G. Teubner, Leipzig, 1977.

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

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http://eqworld.ipmnet.ru/en/solutions/ode/ode0307.pdf