

whence the transformed equation in θ must be the very equation that is, it must be the first equation. I have for shortness used the particular integral $(\sqrt{1+x^2}+x)^m$; but the reasoning should have been applied to it in fact, applying, with alteration, to the general integral

$$O(\sqrt{1+x^2}+x)^m + O'(\sqrt{1+x^2}-x)^m$$

There is of course no difficulty in a direct verification. Thus, starting from the first equation, or equation in θ , the relation $\theta = 2x + 1$ gives

$$\frac{dy}{d\theta} = \frac{1}{2} \frac{dy}{dx} \quad \frac{dy}{d\theta} = \frac{1}{2} \frac{dy}{dx} \quad \left(\frac{dy}{d\theta} \right) = \frac{1}{2} \left(\frac{dy}{dx} \right) = - \frac{1}{10} \left(\frac{dy}{dx} - \frac{1}{x} \frac{dy}{dx} \right)$$

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NOTE ON THE SOLUTION OF AN EQUATION OF THE FIFTH ORDER.

[From the *Philosophical Magazine*, vol. xxiii. (1862), pp. 195, 196.]

This Note was in answer to Mr Jerrard's paper "Remarks on Mr Cayley's Note," *Phil. Mag.* vol. xxi. pp. 348-350, referring to the foregoing paper 310.