Hence if OS be drawn parallel to MR, the tangent at M to $y=f(x)$, to cut PM produced at S and SS′ be taken $=$ PM, PS′ will $=y+x\tan\alpha$; if S′Q be joined, since PQ $=1$, S′Q will be parallel to the tangent at N to the curve $z=xf(x)$. The tangent required is ∴ NT, drawn parallel to S′Q.

§ 9. *Equations of higher degree than the 5th.*

To find the real roots of an equation of the *m*th degree we have to find the points of intersection of one of the curves

$$y=x^m-x^{m-2}, \quad y=x^m, \quad y=x^m+x^{m-2}$$

and of a parabolic curve of degree $m-3$ at most.

A combination of this method and of the following will often simplify the solution. It consists in substituting for the curve whose equation is

$$y=Ax^m+Bx^{m-1}+\ldots+Gx^{m-n}+Hx^{m-n-1}+\ldots+P$$

the curve whose equation is

$$z=\frac{x^{m-n}(Ax^n+Bx^{n-1}+\ldots+G)}{Hx^{m-n-1}+\ldots+P}$$

and drawing the straight line $z=-1$, to cut it.

The solution of an equation of degree m may thus be reduced to the solution of equations of much lower degrees.

On the Teaching of Geometry.

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