$$r_1 = \frac{1}{m}\left(g + \Delta_1^{\frac{1}{m}} + a_1\Delta_1^{\frac{2}{m}} + b_1\Delta_1^{\frac{3}{m}} + \ldots + e_1\Delta_1^{\frac{m-2}{m}} + h_1\Delta_1^{\frac{m-1}{m}}\right);$$

where g is rational, and a_1, b_1, etc., involve only surds subordinate to $\Delta_1^{\frac{1}{m}}$. §38, 47.

7. The equation $F(x) = 0$ has an auxiliary equation of the $(m - 1)^{\text{th}}$ degree. §35, 52.

8. If the roots of the auxiliary be $\Delta_1, \delta_2, \delta_3, \ldots, \delta_{m-1}$, the $m - 1$ expressions in each of the groups

$$\Delta_1^{\frac{1}{m}}\delta_{m-1}^{\frac{1}{m}},\quad \delta_2^{\frac{1}{m}}\delta_{m-2}^{\frac{1}{m}}, \ldots\ldots, \delta_{m-1}^{\frac{1}{m}}\Delta_1^{\frac{1}{m}},$$

$$\Delta_1^{\frac{2}{m}}\delta_{m-2}^{\frac{1}{m}},\quad \delta_2^{\frac{2}{m}}\delta_{m-4}^{\frac{1}{m}}, \ldots\ldots, \delta_{m-1}^{\frac{2}{m}}\delta_2^{\frac{1}{m}},$$

$$\Delta_1^{\frac{3}{m}}\delta_{m-3}^{\frac{1}{m}},\quad \delta_2^{\frac{3}{m}}\delta_{m-6}^{\frac{1}{m}}, \ldots\ldots, \delta_{m-1}^{\frac{3}{m}}\delta_3^{\frac{1}{m}},$$

and so on, are the roots of a rational equation of the $(m-1)^{\text{th}}$ degree. The $\frac{m-1}{2}$ terms

$$\Delta_1^{\frac{1}{m}}\delta_{m-1}^{\frac{1}{m}},\quad \delta_2^{\frac{1}{m}}\delta_{m-2}^{\frac{1}{m}}, \ldots\ldots, \delta_{\frac{m-1}{2}}^{\frac{1}{m}}\delta_{\frac{m+1}{2}}^{\frac{1}{m}},$$

are the roots of a rational equation of the $\left(\frac{m-1}{2}\right)^{\text{th}}$ degree. §39, 44, 55.

9. Wider generalization. §45, 57.

10. When the equation $F(x) = 0$ is of the first class, the auxiliary equation of the $(m - 1)^{\text{th}}$ degree is irreducible. §35. Also the roots of the auxiliary are rational functions of the primitive m^{th} root of unity. §36. And, in the particular case when the equation $F(x) = 0$ is the reducing Gaussian equation of the m^{th} degree to the equation $x^n - 1 = 0$, each of the $\frac{m-1}{2}$ expressions,

$$\Delta_1^{\frac{1}{m}}\delta_{m-1}^{\frac{1}{m}},\quad \delta_2^{\frac{1}{m}}\delta_{m-2}^{\frac{1}{m}},\ \text{\&c.},$$

has the rational value n. §41. Numerical verification. §42.