
1 Algebraic Functions

1.1 Linear

Rule 1.1.1: $\text{Int}[(a+b x)^m, x] \rightarrow \text{Int111}[a, b, m, x]$

Rule 1.1.2: $\text{Int}[(a+b x)^m (c+d x)^n, x] \rightarrow \text{Int112}[a, b, m, c, d, n, x]$

Rule 1.1.3: $\text{Int}[(a+b x)^m (c+d x)^n (e+f x)^p, x] \rightarrow \text{Int113}[a, b, m, c, d, n, e, f, p, x]$

Rule 1.1.4: $\text{Int}[(a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^q, x] \rightarrow \text{Int114}[a, b, m, c, d, n, e, f, p, g, h, q, x]$

Rule 1.1.5: $\text{Int}[P[x] (a+b x)^m, x] \rightarrow \text{Int115}[P[x], a, b, m, x]$

Rule 1.1.6: $\text{Int}[P[x] (a+b x)^m (c+d x)^n, x] \rightarrow \text{Int116}[P[x], a, b, m, c, d, n, x]$

Rule 1.1.7: $\text{Int}[P[x] (a+b x)^m (c+d x)^n (e+f x)^p, x] \rightarrow \text{Int117}[P[x], a, b, m, c, d, n, e, f, p, x]$

Rule 1.1.8: $\text{Int}[P[x] (a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^q, x] \rightarrow \text{Int118}[P[x], a, b, m, c, d, n, e, f, p, g, h, q, x]$

1.2 Quadratic

Rule 1.2.1: $\text{Int}[(a+b x+c x^2)^p, x] \rightarrow \text{Int121}[a, b, c, p, x]$

Rule 1.2.2: $\text{Int}[(d+e x)^m (a+b x+c x^2)^p, x] \rightarrow \text{Int122}[d, e, m, a, b, c, p, x]$

Rule 1.2.3: $\text{Int}[(d+e x)^m (f+g x)^n (a+b x+c x^2)^p, x] \rightarrow \text{Int123}[d, e, m, f, g, n, a, b, c, p, x]$

Rule 1.2.4: $\text{Int}[(a+b x+c x^2)^p (d+e x+f x^2)^q, x] \rightarrow \text{Int124}[a, b, c, p, d, e, f, q, x]$

Rule 1.2.5: $\text{Int}[(g+h x)^m (a+b x+c x^2)^p (d+e x+f x^2)^q, x] \rightarrow \text{Int125}[g, h, m, a, b, c, p, d, e, f, q, x]$

Rule 1.2.6: $\text{Int}[P[x] (a+b x+c x^2)^p, x] \rightarrow \text{Int126}[P[x], a, b, c, p, x]$

Rule 1.2.7: $\text{Int}[P[x] (d+e x)^m (a+b x+c x^2)^p, x] \rightarrow \text{Int127}[P[x], d, e, m, a, b, c, p, x]$

Rule 1.2.8: $\text{Int}[P[x] (d+e x)^m (f+g x)^n (a+b x+c x^2)^p, x] \rightarrow \text{Int128}[P[x], d, e, m, f, g, n, a, b, c, p, x]$

Rule 1.2.9: $\text{Int}[P[x] (a+b x+c x^2)^p (d+e x+f x^2)^q, x] \rightarrow \text{Int129}[P[x], a, b, c, p, d, e, f, q, x]$

Rule 1.2.10: $\text{Int}[P[x] (g+h x)^m (a+b x+c x^2)^p (d+e x+f x^2)^q, x] \rightarrow \text{Int1210}[P[x], g, h, m, a, b, c, p, d, e, f, q, x]$

1.3 Cubic

Rule 1.3.1: $\text{Int}[(a+b x+c x^2+d x^3)^p, x] \rightarrow \text{Int131}[a, b, c, d, p, x]$

Rule 1.3.2: $\text{Int}[(e+f x)^m (a+b x+c x^2+d x^3)^p, x] \rightarrow \text{Int132}[e, f, m, a, b, c, d, p, x]$

Rule 1.3.3: $\text{Int}[(e+f x)^m (g+h x)^n (a+b x+c x^2+d x^3)^p, x] \rightarrow \text{Int133}[e, f, m, g, h, n, a, b, c, d, p, x]$

1.4 Quartic

Rule 1.4.1: $\text{Int}[(a+b x+c x^2+d x^3+e x^4)^p, x] \rightarrow \text{Int141}[a, b, c, d, e, p, x]$

Rule 1.4.2: $\text{Int}[(f+g x)^m (a+b x+c x^2+d x^3+e x^4)^p, x] \rightarrow \text{Int142}[f, g, m, a, b, c, d, e, p, x]$

Rule 1.4.3: $\text{Int}[(f+g x)^m (h+i x)^n (a+b x+c x^2+d x^3+e x^4)^p, x] \rightarrow \text{Int143}[f, g, m, h, i, n, a, b, c, d, e, p, x]$

1.5 Binomial

Rule 1.5.1: $\text{Int}[(a+b x^n)^p, x] \rightarrow \text{Int151}[a, b, p, n, x]$

Rule 1.5.2: $\text{Int}[(c x)^m (a+b x^n)^p, x] \rightarrow \text{Int152}[c, m, a, b, p, n, x]$

Rule 1.5.3: $\text{Int}[(a+b x^n)^p (c+d x^n)^q, x] \rightarrow \text{Int153}[a, b, p, c, d, q, n, x]$

Rule 1.5.4: $\text{Int}[(e x)^m (a+b x^n)^p (c+d x^n)^q, x] \rightarrow \text{Int154}[e, m, a, b, p, c, d, q, n, x]$

Rule 1.5.5: $\text{Int}[(a+b x^n)^p (c+d x^n)^q (e+f x^n)^r, x] \rightarrow \text{Int155}[a, b, p, c, d, q, e, f, r, n, x]$

Rule 1.5.6: $\text{Int}[(g x)^m (a+b x^n)^p (c+d x^n)^q (e+f x^n)^r, x] \rightarrow \text{Int156}[g, m, a, b, p, c, d, q, e, f, r, n, x]$

Rule 1.5.7: $\text{Int}[P[x] (a+b x^n)^p, x] \rightarrow \text{Int157}[P[x], a, b, p, n, x]$

Rule 1.5.8: $\text{Int}[(c x)^m P[x] (a+b x^n)^p, x] \rightarrow \text{Int158}[c, m, P[x], a, b, p, n, x]$

Rule 1.5.9: $\text{Int}[P[x] (a+b x^n)^p (c+d x^n)^q, x] \rightarrow \text{Int159}[P[x], a, b, p, c, d, q, n, x]$

Rule 1.5.10: $\text{Int}[(e x)^m P[x] (a+b x^n)^p (c+d x^n)^q, x] \rightarrow \text{Int1510}[e, m, P[x], a, b, p, c, d, q, n, x]$

1.6 Trinomial

Rule 1.6.1: $\text{Int}[(a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int161}[a, b, c, p, n, x]$

Rule 1.6.2: $\text{Int}[(d x)^m (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int162}[d, m, a, b, c, p, n, x]$

Rule 1.6.3: $\text{Int}[(d+e x^n)^q (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int163}[d, e, q, a, b, c, p, n, x]$

Rule 1.6.4: $\text{Int}[(f x)^m (d+e x^n)^q (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int164}[f, m, d, e, q, a, b, c, p, n, x]$

Rule 1.6.5: $\text{Int}[P[x] (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int165}[P[x], a, b, c, p, n, x]$

Rule 1.6.6: $\text{Int}[(d x)^m P[x] (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int166}[d, m, P[x], a, b, c, p, n, x]$

Rule 1.6.7: $\text{Int}[P[x] (d+e x^n)^q (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int167}[P[x], d, e, q, a, b, c, p, n, x]$

Rule 1.6.8: $\text{Int}[(f x)^m P[x] (d+e x^n)^q (a+b x^n+c x^{(2 n)})^p, x] \rightarrow \text{Int168}[f, m, P[x], d, e, q, a, b, c, p, n, x]$