

linear: $(x - a)$

$$\frac{A}{x - a}$$

quadratic: $(x^2 + ax + b)$

$$\frac{Ax + B}{x^2 + ax + b}$$

repeated linear: $(x - a)^n$

$$\frac{A_1}{x - a} + \frac{A_2}{(x - a)^2} + \cdots + \frac{A_n}{(x - a)^n}$$

repeated quadratic: $(x^2 + ax + b)^n$

$$\frac{A_1x + B_1}{x^2 + ax + b} + \frac{A_2x + B_2}{(x^2 + ax + b)^2} + \cdots + \frac{A_nx + B_n}{(x^2 + ax + b)^n}$$