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7. $ab^2x^4 + bx^3 + cx^2 + dx + ad^2 = 0 \quad (a, b, d \neq 0).$

Generalized reciprocal equation.

The substitution

$$y = bx + \frac{d}{x}$$

leads to a quadratic equation of the form

$$ay^2 + y + c - 2abd = 0.$$

Generalized Reciprocal Equation