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quadratic resolvent

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Defines	cubic resolvent
Defines	resolvent equation

The *quadratic resolvent* of the cubic equation

$$y^3 + py + q = 0, \tag{1}$$

where p and q are known complex numbers, is the auxiliary equation

$$z^2 + qz - \left(\frac{p}{3}\right)^3 = 0$$

determining as its <http://planetmath.org/Equationroots>

$$z_1 = u^3, \quad z_2 = v^3$$

the numbers u and v whose sum $y = u + v$ satisfies the equation (1). See <http://planetmath.org/exampleofsolvingacubicequation> example of solving a cubic equation.

Analogically, a quartic equation has a *cubic resolvent* (resolvent cubic) equation.