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function Approximant = Pade (c,z,L,M)
% Using of Pade approximations in mathematical and physical geodesy,
% Viktor Popadyev, EGU26-12401
% c --- array of coefficients in Taylor Expansion,
% x --- variable,
% L,M --- degrees of Pade numerator and denominator approximant.

P_lowstring = sym(zeros(1, M+1));
Q_lowstring = z.^(M:-1:0);
for r = 0:M
    for s = 1:M
        if (L-(M-s)+r) < 0
            PQ(s, r +1) = 0;
        else
            PQ(s, r +1) = c(L-(M-s)+r +1);
        end
    end
    for i = 0:(L-M+r)
        if i >= 0
            P_lowstring(1, r +1) = P_lowstring(1, r +1) + c(i +1)*z^(i+M-r);
        end
    end
end
P = [PQ; P_lowstring ];
Q = [PQ; Q_lowstring ];
P = det(P);
Q = det(Q);
P = collect(P, z);
Q = collect(Q, z);
Approximant = collect( simplify(P/Q), z);
pretty(Approximant)

```