ALGORITHM FOR FINDING ROOT OF CUBIC EQUATION

BEGIN

NUMBER A, B, C, D, a1, a2, a3, i, Q, R, S, T x1, x2, x3

INPUT A, B, C, D

a1 = B/A

a2 = C/A

a3 = D/a

i = -1^(1/2)

Q = ((3\*a2) - (a12))/^9

R = ((9\*a1\*a2) - (27\*a3) - ((2\*a1^3)))/54

S = ((R + (((Q)^3) + ((R)^2))^1/2))^1/3

T = ((R - (((Q)^3) + ((R)^2))^1/2))^1/3

x1 = S + T - 1/3\*a1

x2 = -(1/2)\*(S + T)-((1/3)\*a1) + ((((1/2)\*i)\*((3)^1/2))\*(S - T))

x3 = -(1/2)\*(S + T)-((1/3)\*a1) - ((((1/2)\*i)\*((3)^1/2))\*(S - T))

OUTPUT “ROOT 1: “+x1

OUTPUT “ROOT 2: “+x2

OUTPUT “ROOT 3: “+x3

END