Q) x^3-9x+1=0 ?

f(0)=1 , f(1)=-7 , f(2)=-9 , f(3)=1

Since root of f(x)=0 lies between 2 and 3 so taking x0=2.7

Assumption-

x= (9x-1)^1/3

F(x)= (9x-1)^1/3

F’(x)=3/(9x-1)^2/3

Since F’(2.7) coming less than 1,satisfy the condition . So taking

x(n+1)=(9x(n)-1)^1/3

n=0

x1=(9x0-1)^1/3=2.8562

x2=(9x1-1)^1/3=2.9125 -------------------------------------------

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x7=2.9427

X8=2.9428

We get two approximate values having same decimal digits up to three places ,so the answer is 2.942