

## Re: Roots of $x^3 = 1$ ;

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**From:** Virgil (ITSnetNOTcom#virgil\_at\_COMCAST.com)

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In article <nTffid.10706\$ta5.6947@newsread3.news.atl.earthlink.net>, Kira Yamato <no@mail.com> wrote:

> *Saju wrote:*

> > *Hello,*

> >

> > *I was teaching myself some algebra when I got stuck at the following*

> > ...

> >

> > *I am trying to find roots of  $x^3 = 1$*

> >

> >  *$x = 1$  is a solution. But keeping  $x = i^{(4/3)}$  also seems to work, so*

> > *does  $i^{(8/3)}$ ,  $i^{(16/3)}$  and so on – I am able to generate 1 real root*

> > *and infinite complex roots – this must be bogus.*

> >

> > *According to the theory,  $x^3 = 1$  must have 3 roots (real+complex) – so*

> > *what am I missing ?*

> >

> > *regards*

> > *srp*

>

> *But  $i^4 = 1$ . So u're infinitely many roots actually reduce to just 3.*

Also  $x^3 - 1 = 0$  but  $x^3 - 1$  factors into  $(x-1)(x^2 + x + 1)$ , so that either  $x-1 = 0$  or  $x^2 + x + 1 = 0$ , and the latter is a quadratic equation with two (complex) roots.