A poem on the imaginary number i

THE MATHEMATICAL "*i*"

by Punya Mishra

The negative numbers were full of dismay
We have no roots, they were heard to say
What, they went on, would be the fruit
Of trying to compute our square root?
Matters seem to be getting out of hand
Since the negatives have taken a stand,
On the fact that positives have two roots, while they have none
They plead, would it have killed anybody to give us just one?
The square roots of 4 are + and – 2! As for – 4? How unfair,
He has none! None at all. Do the math gods even care?
We suspect a plan sinister, our value to undermine
Just because we are on the left of the number line
Among the more irrational negatives, one even heard cries
It is time, they said, it is time, to radicalize!!
Hearing this non-stop (somewhat justified) negativity
Mathematicians approached the problem with some levity
And suggested a solution, kinda cute and fun
Let's rename, they said, the square root of minus 1!
In essence let's re-define the problem away, on the sly
By just calling this number (whatever it may be) i.
i times itself would be one with a negative sign
Every negative could now say, a square root is mine!
This simple move would provide the number -36
With two roots, + and –, i times 6!

All in all, an awesome fix.
The positives grumbled, what could be dumber
Than this silly imaginary number
But it was too late, much too late you see
To bottle this strange mathematical genie.
i was now a part of the symbolic gentry
Finding use, of all places, in trigonometry.
And with time i began its muscles to flex
Extending the plane, making it complex!
In fact, hanging out with the likes of e and Pi
i got bolder, no longer hesitant and shy.
And combined to form equations, bold and profound,
Patterns that, even today, do not cease to astound.
Consider for a moment the equation
*e to the power Pi * i plus 1*
It was Euler who first saw, how these variables react
To come up with a beautiful mathematical fact,
To total up to, (surprise!) the number zero.
Could we have done it without our little imaginary hero?
Even today Euler's insight keeps math-lovers in thrall
One equation to rule them all.
So if you want to perceive the value of this little guy
I guess you have to just develop your mathematical i.
It also reminds us just how often we forget to see
The significance, to human life, of the imaginary.

Michigan State University
punya@msu.edu, http://punyamishra.com