Math Diversion Problem 437

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> The only reason that we like complex numbers is
> that we don't like real numbers.
> — Bernd Sturmfels

The problem is found at:

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Source: https://indico.cern.ch/event/726779/contributions
/2991244/attachments/1642552/2727515
/complex_numbers_exercises.pdf
Title: Complex numbers- Exercises with detailed solutions
 Presenter:  CERN
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1 The Problem

Given the relation

$$\overline{z} = i(z-1)\,, \tag{1}$$

find the values of z.

2 The Solution

Let's begin by taking the complex conjugate of (1):

$$z = -i(\overline{z}-1)\,. \tag{2}$$

Now, subtract unity from (1):

$$\overline{z} - 1 = i(z-1) - 1\,, \tag{3}$$

and then substitute this into the RHS of (2).

$$z = -i[i(z-1)-1] = z - 1 + i\,. \tag{4}$$

Hence, z has no solution.