

HCoV Skills Assignment 1

Li Yueheng, s2306076

January 27, 2022

1 Communication exercise

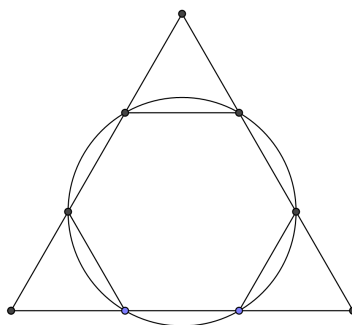


Figure 1: Example Figure

Figure 1 consists of a hexagon cut from the outside by a circle. Two of the hexagon's neighboring vertices are colored blue. Three non-neighboring edges of the hexagon, including the one joining the blue vertices, are extended to form an equilateral triangle. All vertices but the two blue ones are colored black.

2 Holomorphic functions

Proposition 1. *Suppose the function f is holomorphic on \mathbb{C} and takes only real values. It follows that f must be constant.*

Proof. Since f is holomorphic on the complex plane \mathbb{C} , it should satisfy the Cauchy-Riemann equations anywhere on \mathbb{C} . Since f takes only real values, from the Cauchy-Riemann equations we have

$$\begin{aligned}\partial_x f &= \partial_y 0 = 0 \\ \partial_y f &= -\partial_x 0 = 0\end{aligned}$$

16 Therefore f is continuously differentiable on \mathbb{C} . By the Fundamental theo-
17 rem of Calculus, f is a constant function on any line parallel to the x-axis
18 or the y-axis. It follows that f is a constant function on \mathbb{C} . \square

19 **3 Microwriting**

20 Plagiarism is the act of copying others' work without appropriate acknowl-
21 edgement or one's own previously assessed, either intentionally or unintentionally.[1]

22 Collusion is a particular type of plagiarism, where students work in unau-
23 thorized collaboration to complete an assessed work.[1]

24 Suspected academic misconduct, including plagiarism and collusion will
25 lead to an investigation conducted by the university's officials, who will de-
26 termine appropriate penalties for confirmed academic misconduct. These
27 penalties might include grade penalties, disciplinary actions and even ex-
28 pulsion from the university.[2, 3]

29 **References**

30 [1] [https://teaching.maths.ed.ac.uk/main/undergraduate/studies/assessment/academic-](https://teaching.maths.ed.ac.uk/main/undergraduate/studies/assessment/academic-misconduct)
31 [misconduct](https://teaching.maths.ed.ac.uk/main/undergraduate/studies/assessment/academic-misconduct)

32 [2] [https://www.scanmyessay.com/plagiarism/consequences-of-](https://www.scanmyessay.com/plagiarism/consequences-of-plagiarism.php)
33 [plagiarism.php](https://www.scanmyessay.com/plagiarism/consequences-of-plagiarism.php)

34 [3] [https://www.scribbr.co.uk/preventing-plagiarism/consequences-of-](https://www.scribbr.co.uk/preventing-plagiarism/consequences-of-plagiarism/)
35 [plagiarism/](https://www.scribbr.co.uk/preventing-plagiarism/consequences-of-plagiarism/)