Figures Mathematical Techniques For Engineers Complex Analysis

Felix Claeys, Brecht Verbeken, Simon Verbruggen

September 27, 2025

2.1.1 Continuity Definition

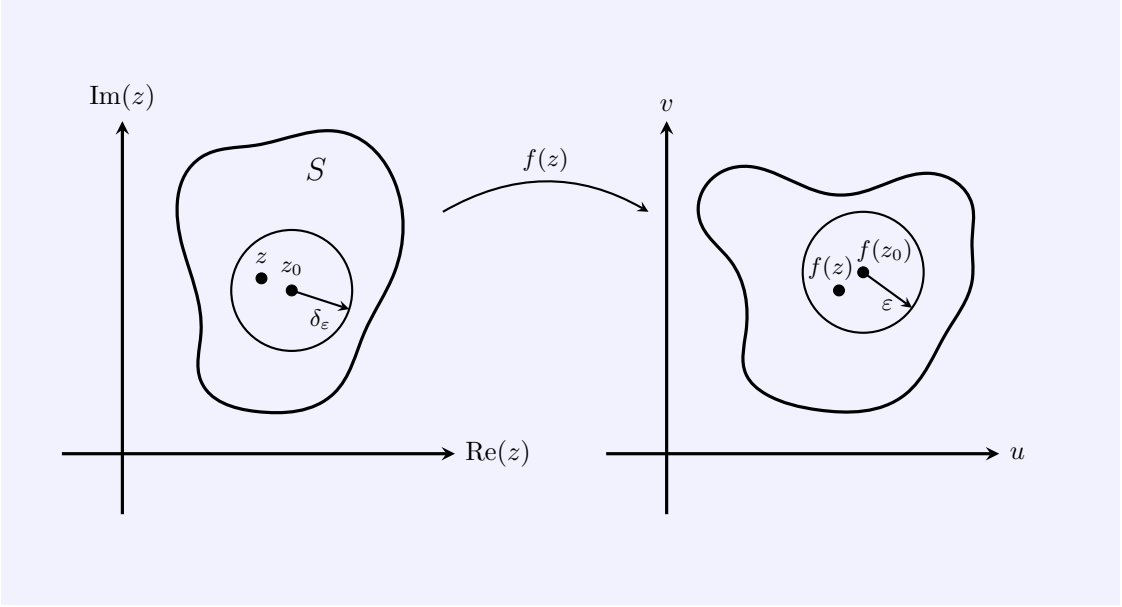

Figure 1:

2.4 Geometrical Interpretation Of The Complex Derivative

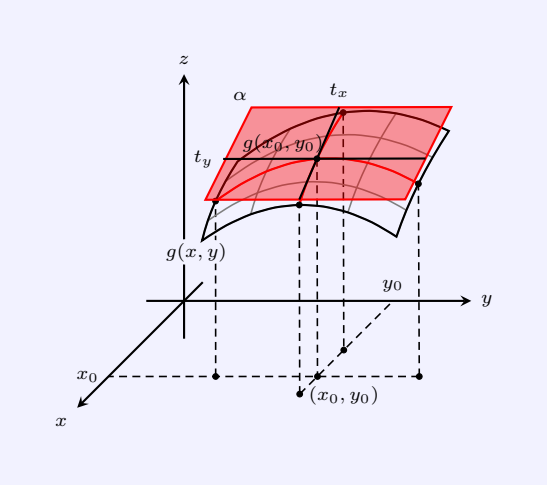

Figure 2: In every point $g(x_0, y_0)$ of a surface $g(x, y)$, a tangent plane can be drawn (red). The tangent lines t_x, t_y are oriented according to the x- and y-axis, respectively. They have a slope which corresponds to the partial derivatives $\frac{\partial}{\partial x}$ and $\frac{\partial}{\partial y}$, respectively.

3.2 Bilinear transforms

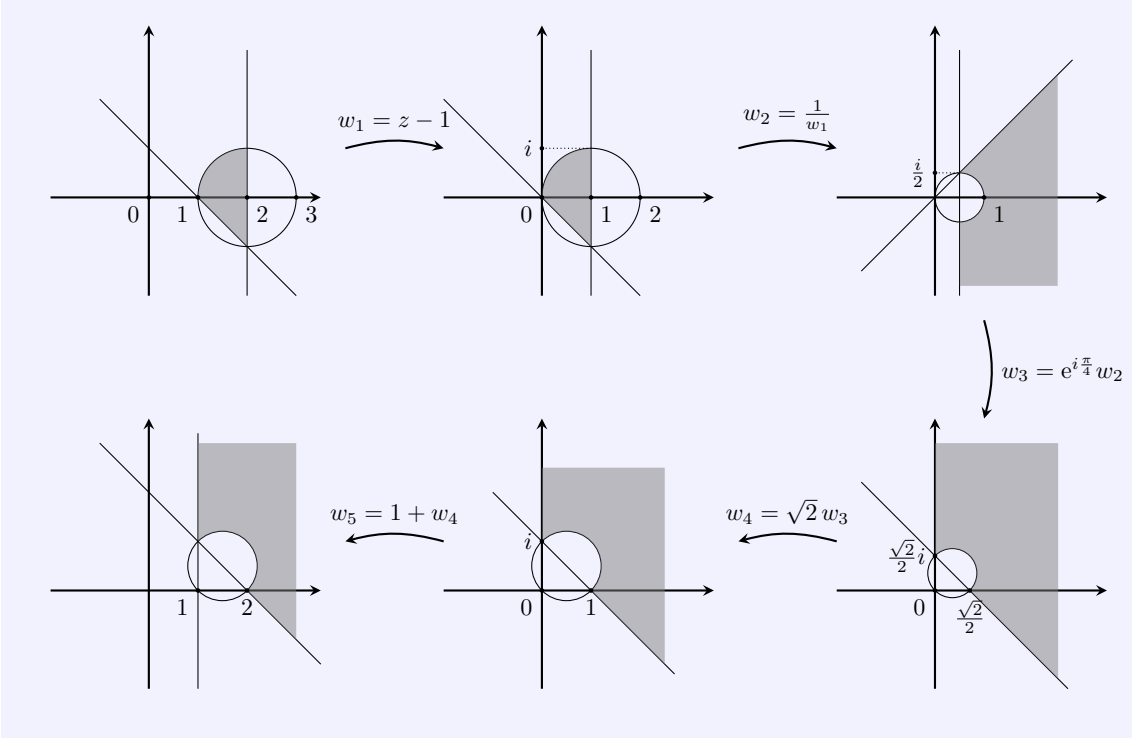

Figure 3:

3.5.1 Exponential function periodicity

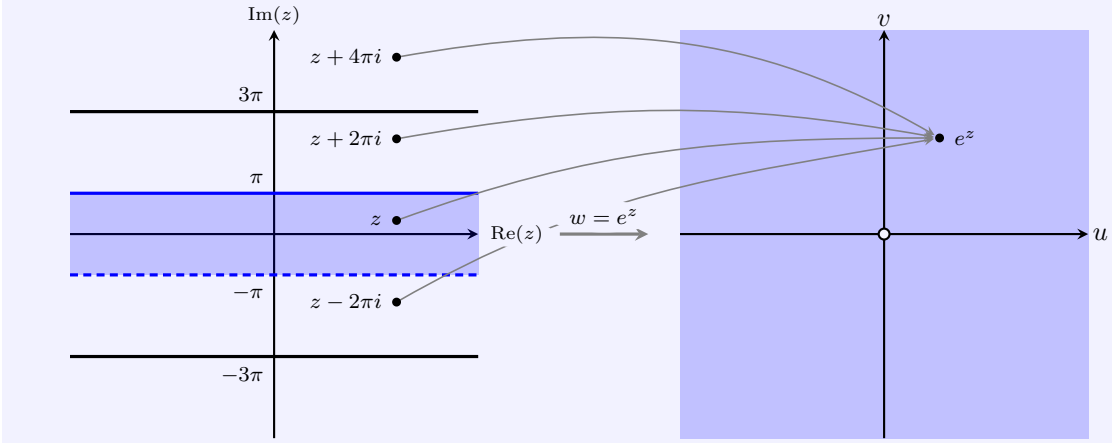

Figure 4:

3.5.2 Exponential function image vertical lines

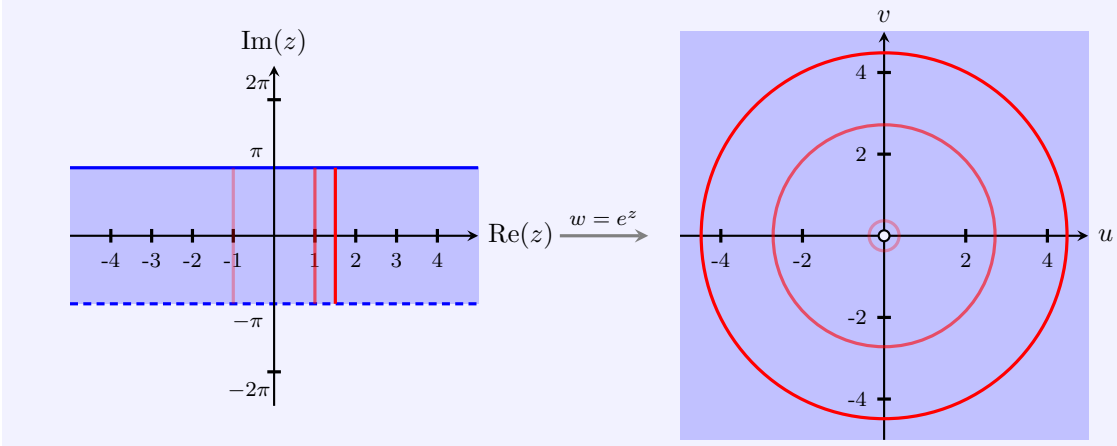

Figure 5:

3.5.3 Exponential function image horizontal lines

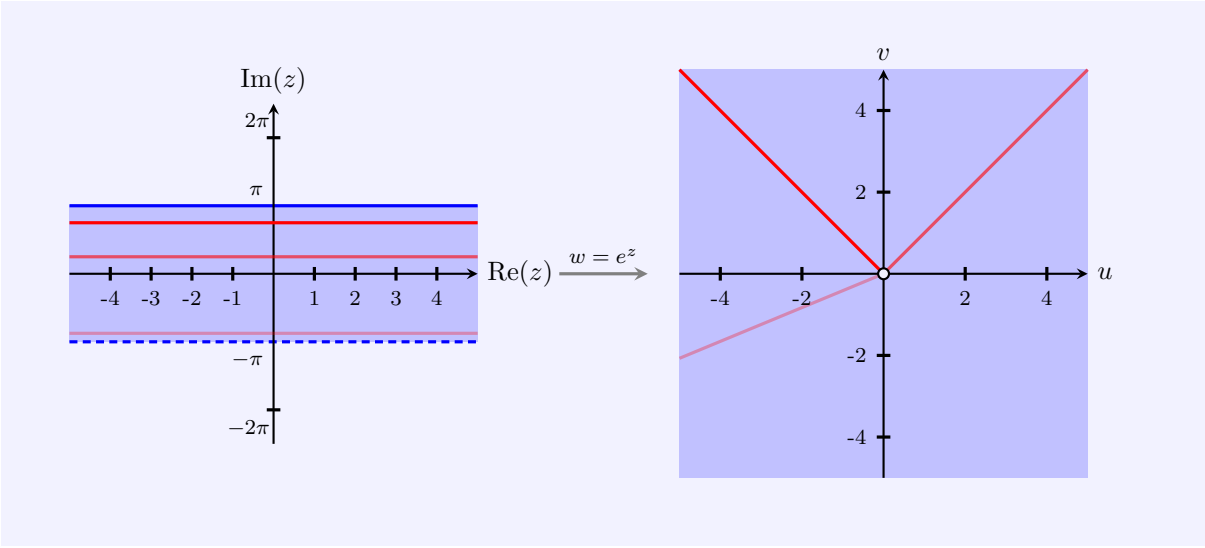

Figure 6:

5.1.1

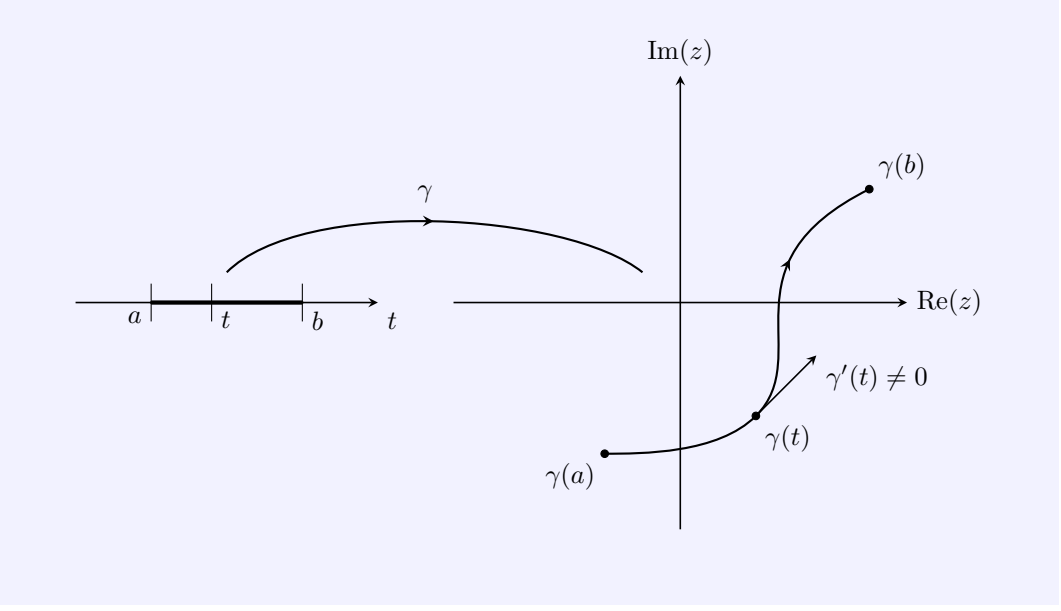

Figure 7:

5.2.3

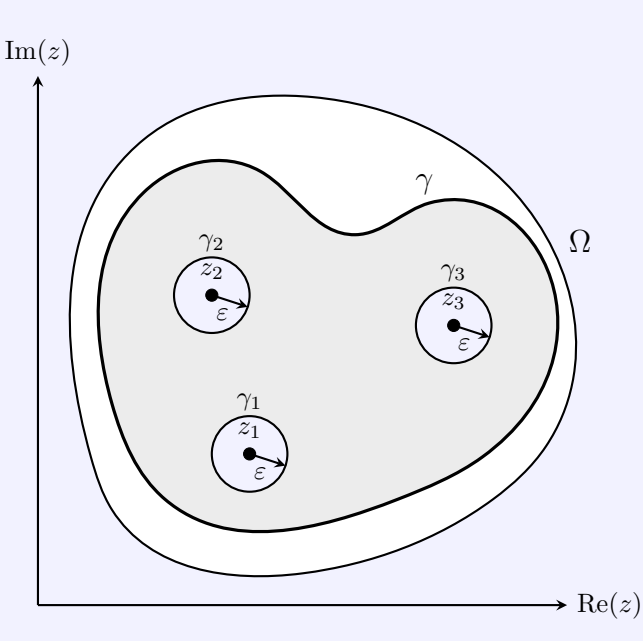

Figure 8:

5.3 Cauchy integral formulas and consequences

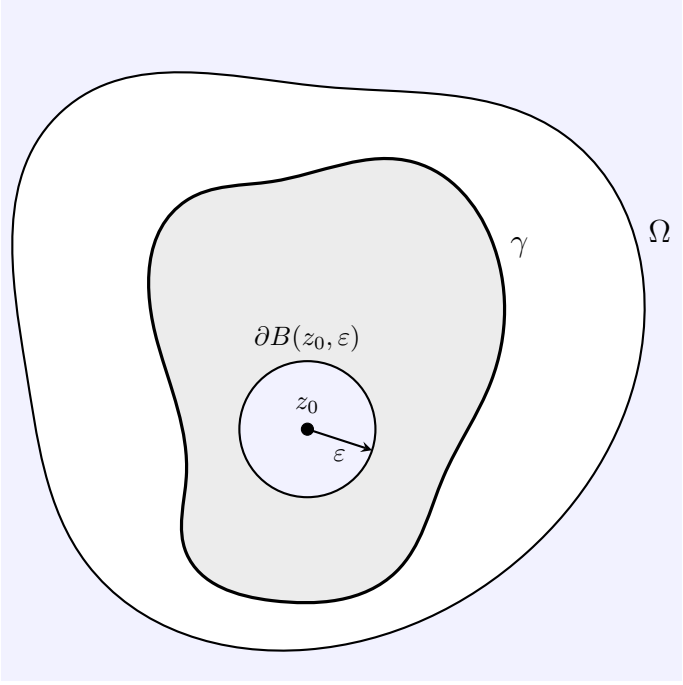

Figure 9:

5.4.4

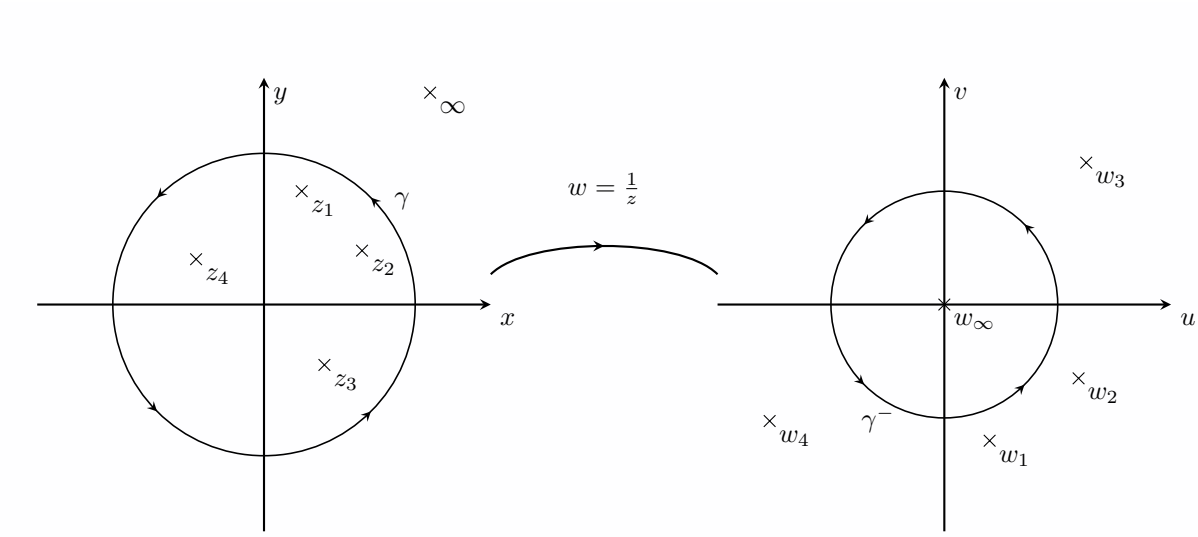

Figure 10:

5.5.2 Uniqueness of holomorphic functions

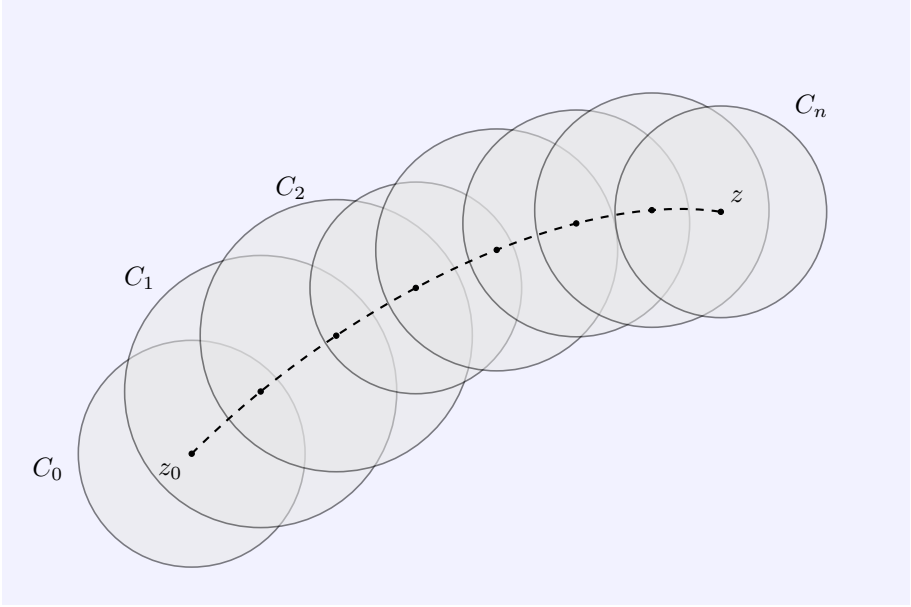

Figure 11:

5.6.2

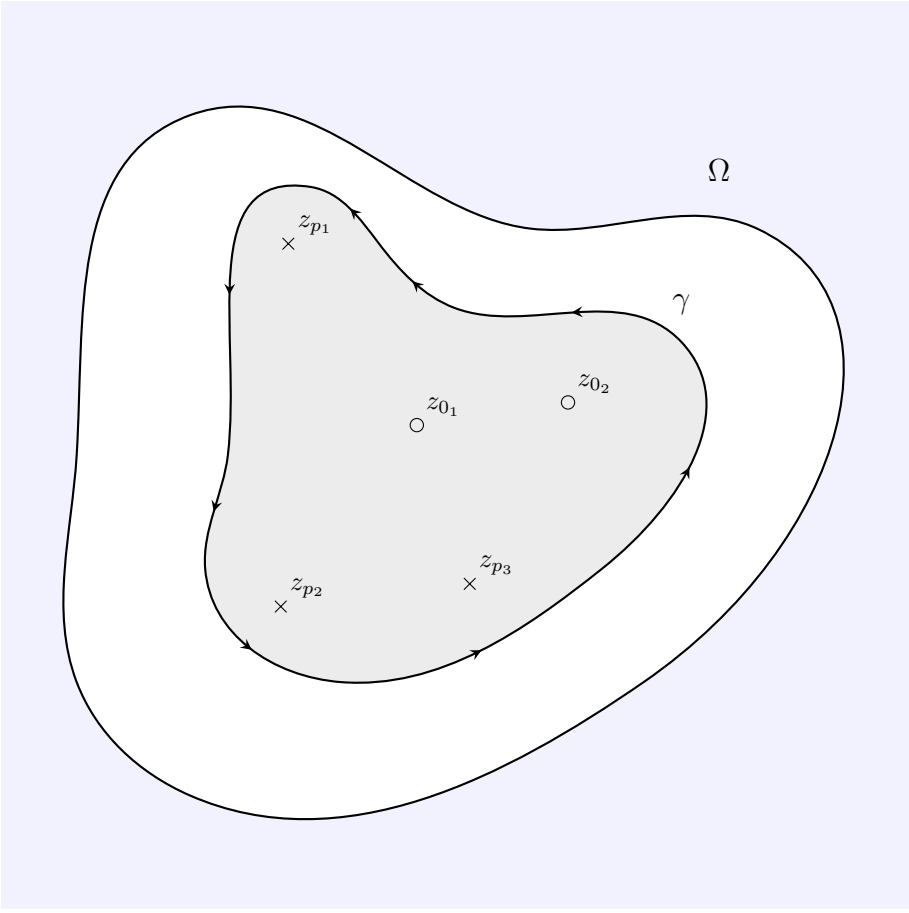

Figure 12:

5.6.3 Argument Principle

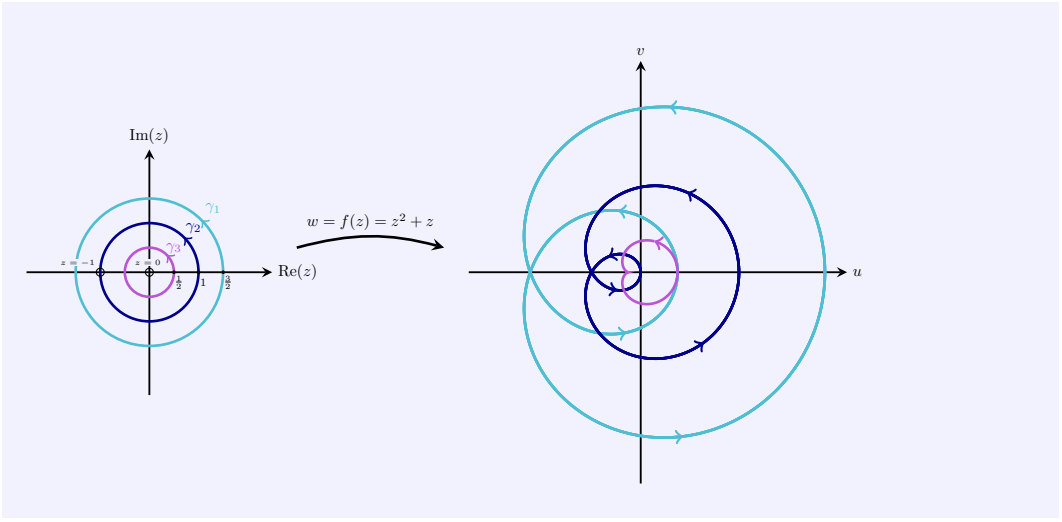

Figure 13:

5.6.3 Rouches theorem

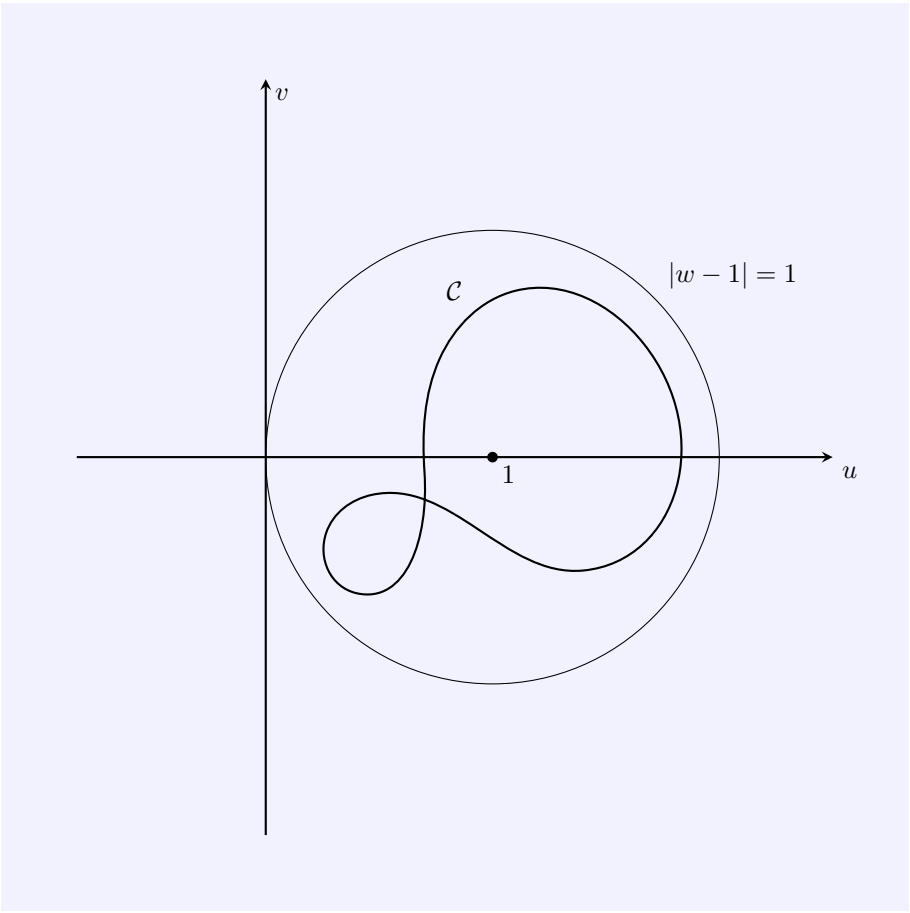

Figure 14: