# Shared values of meromorphic functions on a compact Riemann surface

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**Abstract:**
Two meromorphic functions $f_1$ and $f_2$ are said to share the value $a \in \mathbb{C}$ if for any $z \in \mathbb{C}$ we have

$$f_1(z) = a \Leftrightarrow f_2(z) = a.$$

In the 1920s Rolf Nevanlinna proved the following fascinating theorem:
If two meromorphic functions $f_1$ and $f_2$ in the complex plane share 5 different values, then $f_1 = f_2$.

We discuss similar questions for two meromorphic functions on a compact Riemann surface.