Piecewise Composite Functions

$\lfloor f^2 + 1 \rfloor, \quad 0 \le f \le 3$
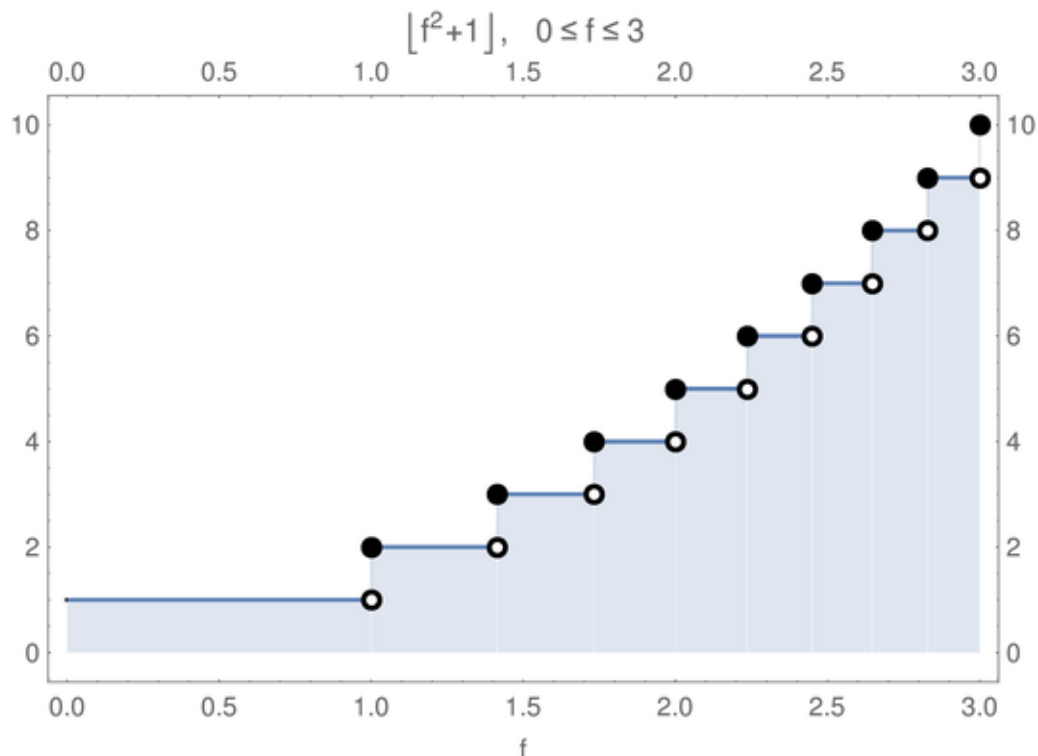
$$
\begin{cases}
1 & f < 1 \\
2 & 1 \le f < \sqrt{2} \\
3 & \sqrt{2} \le f < \sqrt{3} \\
4 & \sqrt{3} \le f < 2 \\
5 & 2 \le f < \sqrt{5} \\
6 & \sqrt{5} \le f < \sqrt{6} \\
7 & \sqrt{6} \le f < \sqrt{7} \\
8 & \sqrt{7} \le f < 2\sqrt{2} \\
9 & \text{True}
\end{cases}
$$