Let \((Gen, H)\) be a collision-resistant hash function and let \(F\) be a PRF. For each of the following, state whether \(\hat{H}\) is necessarily collision resistant. Justify your answer.

1. \(\hat{H}^s(x_1|\|x_2) = H^s(x_1 \oplus F^s(x_2))\)

2. \(\hat{H}^s(x_1|\|x_2) = H^s(H^s(x_1)|\|x_2)\)