## A puzzle about using information

I have two quarters. One is fair (comes up heads $50 \%$ of the time). The other is biased (comes up heads $75 \%$ of the time). I choose one of the two coins at random, so it is $50 \%$ likely to be the biased coin.

I toss the coin five times, and get the sequence HHHHT. Now how likely is it that I chose the biased coin?

