WS #21 - Stopping Rules
Math 150, Jo Hardin

Monday, April 28, 2025

Your Name: _____

Names of people you worked with: _____

Among the group of you, how many people in class can you name? Try it.

Task: You flip a fair coin twice. You win (at stage 1) if you get 50% or more heads. If you don't get 50% or more heads, you flip the coin two more times and **combine the four flips**. You win (at stage 2) if, after 4 flips you have 50% or more heads.

What is the overall probability that you win?

Hint: it might help to write out the 16 different combinations of four flips that can happen.

Solution: Here are the 16 different ways you can flip the coin 4 times:

HHHH	HHHT	HHTH	HTHH	THHH	HHTT	HTHT	HTTH
THTH	THHT	TTHH	TTTH	TTHT	THTT	HTTT	TTTT

In 12 of those settings, you will win at the first stage.

In the remaining 4 settings, you win in 1 of them (TTHH) at the second stage.

P(winning) = 13/16 = 0.8125