

ECE 341 - Homework #12

t-Test with a Single Population

Reaction Time

1) Go to the Human Benchmark Dashboard and record your reaction times.

<https://humanbenchmark.com/tests/reactiontime>

From your results

- What is the 90% confidence interval for your reaction time each game?
- What is the 90% confidence interval for your average reaction time?

2) What is the probability that your reaction time will be less than 200ms

- For the next trial?
- For your overall average reaction time?

Aim Trainer

3) Go to the Human Benchmark Dashboard. Record your time to hit 30 targets

<https://humanbenchmark.com/tests/aim>

From your results

- What is the 90% confidence interval for your time each game?
- What is the 90% confidence interval for your average time?

7-Card Poker

The results from a Monte Carlo simulation of 100,000 hands of 7-card poker are:

- Deal 7 cards to each player, take the best 5-card hand

Hand	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Straight Flush	224	219	215	227	202
Four of a Kind	169	157	170	162	167
Full House	2,548	2,641	2,567	2,485	2,585
Flush	2,760	2,812	2,774	2,805	2,860
Straight	5,166	4,992	5,084	5,118	5,083
3 of a Kind	4,766	4,829	4,824	4,730	4,763
2 Pair	23,564	23,422	23,502	23,446	23,684
Pair	43,778	43,719	43,688	43,883	43,563
High Card	17,025	17,209	17,176	17,144	17,093

4) From these results for a 4-of-a-kind

- What is the 90% confidence interval for the number of hands that will be 4-of-a-kind in 100,000 hands?
- What is the 90% confidence interval for the odds of getting 4-of-a-kind (population question)

5) From these results for a full house:

- What is the 90% confidence interval for the number of hands that will be a full=house?
- What is the 90% confidence interval for the odds of getting a full house?

6) From these results for a flush:

- What is the 90% confidence interval for the number of hands that will be a flush?
- What is the 90% confidence interval for the odds of getting a flush?

note: Exact odds were computed in homework set #2 and #3