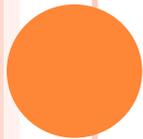


# MIT 15.S50 LECTURE 1

Wednesday, January 18<sup>th</sup>, 2012



# WELCOME TO MIT 15.S50!

- When: MWF 3:30 - 5:00 PM, Jan 18th to Feb 3rd, 2012

Where: MIT **54 - 100** (the room has been changed, since we have over 200 people!)

Instructor: **Will Ma**, willma at mit dot edu

Professor: **Dimitris Bertsimas**, dbertsim at mit dot edu

Credits: H 3 units, can be repeated for credit



# SYLLABUS (VERY ROUGH)

- card counting, myths of poker, preflop ranges, polarization, bet sizing, implied odds, reverse implied odds, flop analysis, credible bluffs, thin value, folding good hands, slow-playing, river odds, ICM theory, best responding, faults of Nash Equilibrium, decisions vs. results, statistics and variance, risk management, dealing with bad luck



## GRADING: PASS/FAIL

- I have set up a private home league for MIT 15.S50, on [Pokerstars](#). To pass, you will need to accumulate 10 points playing online poker tournaments. On average you will earn one point per tournament you play, so you should play at least 10 tournaments during the 2.5 weeks. **Note that there are no Problem Sets or Exams =)**



## CURRENCY VS. POINTS

- You'll notice that all Pokerstars tournaments are described by the monetary buy-in and the monetary payouts, with no mention of points.
- We're only worrying about points.
- This is unrealistic? Yes. Unfortunately, the Pokerstars software cannot maintain a leaderboard for "who's made the most money" (which makes sense).



## CURRENTY VS. POINTS [CONTINUED]

- If you just tried to maximize your monetary payouts each tournament, this should also maximize your points. Only the top 20% get money while the top 33% get points, but other than that, the two payout curves have the same first and second derivatives.
- Except, you are incentivized to play as many tournaments as possible!
- You can still use your play money balance as an indicator to yourself of how much money you would've made.



Tournaments	Cash Games
<b>Fixed buy-in for a certain amount of chips</b>	Start with any amount of money you want; reload anytime
<b>Play until you lose all your chips</b>	Start and stop anytime
Blinds keep increasing, so eventually you lose all your chips	Fixed blind amount (say \$1/\$2)
<b>No control over your table</b>	You choose your table
Goal is to survive	Goal is to kill
Frequent but fixed losses accompanied by the occasional big win	Big wins, small wins, small losses, big losses can all happen
More variance	Less variance
Fun?	Work?
<b>Wider range of situations (# of players at table, stack sizes, antes, bubbles)</b>	Fixed situations
Low house rake (premium)	High house rake (premium)



# DAILY TOURNAMENT SCHEDULE (SUBJECT TO CHANGE; DOESN'T INCLUDE SPECIALS)

- 6:00 PM - Daily 6-handed
- 7:00 PM - Daily Major
- 8:00 PM - Daily Turbo
- 9:00 PM - Daily Deepstack
- 10:00 PM - Daily Shortstack
- 11:00 PM - Daily Hyper-turbo
- The Major and Deepstack tournaments will take anywhere between a minute and 3 hours. The other tournaments will take anywhere between a minute and 2 hours. It depends on how long you last and how many players there are.
- The importance of multi-tabling. By single-tabling, you are never increasing your Expected # of Points Earned; only do this for learning, which is important.
- Late registration for 1 hour?



## DON'T WORRY...

- I do not wish to fail anyone. If you are far from 10 points in the last week, then you should try to play as many tournaments as possible. If you still do not get 10 points, you must submit a report explaining how you "attempted many tournaments but got unlucky", and I will pass you.



# EYES ON THE PRIZE

- Keep playing even after you have 10 points!  
There will be fantastic prizes for the players with the most points (exact structure TBA):
  - Private coaching from Mike McDonald, who is flying down to give guest lecture + coach (he normally charges \$800/hour and has lots of takers!)
  - 4 other world-class poker players from around the world have also donated virtual coaching hours
  - Free Card-Runners subscriptions ([www.cardrunners.com](http://www.cardrunners.com); website where poker pros make instructional videos recording themselves playing online poker; I'm a pro there)
  - Signed poker books from Bill Chen, and other people
  - Signed Andy Bloch (MIT Blackjack Team) DVD



# SOCIAL EXPERIENCE

- You can click "Standings" in Pokerstars to see how you are doing.
- I hope that this casually competitive league is an enjoyable social experience for the whole class.
- I hope no one is uncomfortable about their results being public.
- I hope you end up meeting your online opponents in real life.
- This is why I will make sure to ask for people's names in class! So that you can find them the next day and say, "Wow you make a sick bluff against me!"



# COURSE HOMEPAGE AND MAILING LIST

- Please join the mailing list!
- Do so at the course homepage:
- <http://web.mit.edu/willma/www/mit15s50.html>
- All announcements will be sent on the mailing list and then posted to the homepage. Course materials will be posted to the homepage.
- **Missing classes**: doesn't matter in terms of "Psets / Exams", but each class greatly builds on previous classes. Hopefully videotaping works and you can watch the lecture on Youtube; if not, try your best reading from the Powerpoint slides. If you don't understand something, ask your friends / email me.



# LISTENER?

- I encourage you to register for the class (no extra work if you were already going to play anyway).
- If you are NOT registered for the class (or have dropped the class) but DO play in the online league, please send me an email explaining your situation (eg. I'm from Harvard).



# START PLAYING RIGHT AWAY!

- No penalty / shame for playing a tournament and busting right away
- Point earning rate is constant...
- Difficult to relate to lecture material if you never play poker yourself, and you'll quickly fall behind
- Fall behind socially
- Give yourself a shot to win prizes!



# LET'S START PLAYING!

- [example hand on Universal Replayer]



# WHAT DID WE LEARN?

1. Most hands miss most flops
2. Small bets and raises can put your opponent in a tough situation, and don't cost you that much
3. When blinds are small, don't put in your whole stack with one pair

However, the focus of today will be on pre-flop play. Even though it is less interesting, it is much more important to get pre-flop right than post-flop right when you're just starting. For postflop play in the tournaments you play on the first few days, just "wing it" with the 3 pointers above.



# THE IMPORTANCE OF BLINDS

- The game revolves around the blinds. The motivation of every hand is to steal the money that was forced into the pot. Without the blinds, there is no game.
- You would always fold KK preflop if there were no blinds.
- Your stack size is always measured relative to the blinds. Having \$400 in front of you in a game where the blinds are \$1/\$2 is, for our purposes, completely equivalent to having \$4000 in front of you in a \$10/\$20 game.
- In both situations above, we say that you have “200 bets”, or “200 big blinds”, or “200BB”.



## SO YOU WANT THE BLINDS...

- If no one has raised yet, DO NOT CALL. RAISE to give yourself a chance of winning the blinds for free preflop.
- Although this rule will eventually have exceptions, this is definitely **beginner mistake #1**.
- The minimum raise is raising to 2BB. However, this is usually too small. You give the blinds the odds to have a profitable call. And when they have a profitable move, that money is coming from YOU.
- On the other hand, if you raise too big (say all-in), you are risking more than necessary to make your steal.
- You want to hit the “sweet spot” between the minimum-raise of 2BB and “all-in”.



# HOW MANY BETS DO I HAVE?

- Empirically, raising to 3BB is standard BUT this number goes down to 2BB as the # of bets you have goes down.
- This is the most important factor in pre-flop play. You should know it at the start of EVERY hand.
- General rule: The fewer # of bets you have, the less you have to raise to, because the # of bets that could potentially go in postflop is relatively smaller. Thus direct odds matter less since your postflop room to maneuver is smaller.
- However, if you are the big stack and everyone behind is a small stack, you never actually need to play for your whole stack. So the **effective** # of BB's you have is less than what you actually have.



# CALCULATING EFFECTIVE STACK SIZE



# 100BB EFFECTIVE – CAN CALL A LOT MORE



# 10BB EFFECTIVE – CAN'T CALL AS MUCH



# RULE OF THUMB

- >50BB: raise to 3x (3BB)
- 25-50BB: raise to 2.5x
- 15-25BB: raise to 2x
- <15BB: just go all-in or fold. Even though 15BB seems like a lot, it really isn't! Even if you raise to 2x, putting in 2 of your last 15 BB's is such a big portion of your stack that you can't fold when someone re-raises anyway. So you might as well just go all-in.
- Don't be afraid to do this! This is **beginner mistake #2**.
- Can also raise to a smaller # of BB's from early position (more on this later).



## CARDS AND POSITION

- Okay, so now I know that I'm supposed to raise preflop and steal the blinds, and I know how big to size my bet in all situations.
- But the most important factor has to be my cards, right?
- Yes! But how good your cards are is only **relative to your position**. 99 in early position is much worse than 55 as the dealer.



# NAMES OF POSITIONS



# HOW MANY TO BUTTON IS ALL THAT MATTERS, SINCE GAME “STARTS OVER”



# OTHER STANDARD SLANG TERMS



# THE DEALER ONLY HAS TO GET THROUGH 2 PLAYERS!





## WHAT HANDS TO RAISE? (BUT NOT ALL-IN)

- >50BB: raise to 3x (3BB)
- 25-50BB: raise to 2.5x
- 15-25BB: raise to 2x
- <15BB: just go all-in or fold. Even though 15BB seems like a lot, it really isn't! Even if you raise to 2x, putting in 2 of your last 15 BB's is such a big portion of your stack that you can't fold when someone re-raises anyway. So you might as well just go all-in.



# TIGHTISH RANGE TO OPEN FROM UTG AT 9-HANDED TABLE (7 TO BUTTON)







BUT WAIT A SECOND! WHAT IF I HAVE A GOOD HAND BUT UTG OR UTG+1 DIDN'T FOLD!?



# UNDERSTANDING EQUITY

- The probability that you win the pot.
- It's an expectation over two (mostly independent) probability distributions:
  - your opponent's hand, to which you assign a distribution (and Bayesian update it as the action unfolds)
  - the cards yet to come on the table
- Pokerstove is a very nice software to calculate this!
- Download at [www.pokerstove.com](http://www.pokerstove.com). Pretty self-explanatory to use; email me or ask friends if you have issues.



# HOW MUCH EQUITY DO WE NEED?

- From any non-blind position, you need to put 120 after which the pot would be 300 = 40%.
- From the small blind, you need to put in 100 after which the pot would be 280 = 36%.
- From the big blind, you need to put in 80 after which the pot would be 260 = 31%.
- Factor 1: Am I in position postflop?
  - Yes if you are in a non-blind position. Subtract ~1.5% from the equity you need.
  - No if you are in a blind position. Add ~1.5% to the equity you need.
- Factor 2: How many players behind me do I have to worry about?
  - Add ~0.3% to the equity you need for each player yet to act.



# REMEMBER THE SITUATION...

The screenshot shows a poker table with 10 players. The dealer button is in the bottom position. The pot is \$120. The players and their stacks are:

- lehout: \$2935
- Aussie\_star1: \$3247
- CutiePi314: \$2960
- BEGEMOTIK3: \$2945
- vunne: \$1293
- Sam7717: \$3780
- lotos64: \$3000
- andersbisse: \$3135
- Davidv1213: \$2910

There are two cards on the table: Jack of Spades and Jack of Clubs. The pot is \$120. There are also two smaller pots of \$40 and \$20. The chat window is empty. The last action is "Aussie\_star1 folds".

Buttons: LEAVE TABLE, VIEW LOBBY

Chat: Chat, Notes, Stats, Info

Last Action: Aussie\_star1 folds



# AND OUR OPPONENT'S RANGE...

lehout \$3055

Aussie star1 \$3247

CutiePi314 \$2960

3♠ 3♣

\$40

\$20

vunne \$1293

Sam7717 \$3780

lotos64 \$3000

andarsbisse \$3135

BEGETOTIK3 \$2945

dauidv1213 \$2910

LEAVE TABLE

VIEW LOBBY

AA, KK, QQ, JJ, AKs, AKo, TT, AQs, AQo, 99, AJs, KQs, 88

Chat Notes Stats Info

Last Action

CutiePi314 dealt [3s,3c]



# CONSIDERING YOUR EQUITY

- Wow, 53%, more than 50% against his range!

Hand Distribution			Equity
Player 1	R D	88+, AJs+, KQs, AQo+	46.738%
Player 2	R D	JJ	53.262%

- We definitely have the necessary equity to call. In fact, we should be raising, since it is in our favor is money is put in 1-to-1!



# CONSIDERING YOUR EQUITY [CONTINUED]

- Suppose we had AQs instead:

Hand Distribution		Equity
Player 1	$\frac{R}{D}$ 88+,AJs+,KQs,AQo+	57.191%
Player 2	$\frac{R}{D}$ AQs	42.809%

- By the calculation from a few slides ago, it suggested we need 40.3% equity, which we do have, so we can at least call.
- Suppose we had KQo instead:

Hand Distribution		Equity
Player 1	$\frac{R}{D}$ 88+,AJs+,KQs,AQo+	67.940%
Player 2	$\frac{R}{D}$ KQo	32.060%

- Note that we have nowhere near the 40.3% equity required, so calling is not +EV.
- However, in both cases, it's possible that raising is +EV. And in the case of AQs, it's possible raising is MORE +EV than calling. This deals with “polarization”...we will look at it in a future lecture.





# HIJACK (3 TO BUTTON)



# CUTOFF (2 TO BUTTON) : APPROX 30%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

SHIFT, CTRL, ALT  
modify selection

All

Any Suited

Any Broadway

Any Pair

Clear

Selected

55+,A2s+,K5s+,Q7s+,J8s+,T8s+,9

30.2%



# BUTTON (1 TO BUTTON): APPROX 55%

SHIFT, CTRL, ALT  
modify selection

All  
Any Suited  
Any Broadway  
Any Pair  
Clear

Selected

33+, A2s+, K2s+, Q2s+, J3s+, T5s+, 9

55.8%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	88	87s	86s	85s	84s	83s	82s	
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22



## SMALL BLIND

- Let's compare opening from the small blind to opening from the button.
- Opening from the small blind, you have to get through
- You also have to wager less to raise, since half a bet has automatically been put in already.
- However, you are out of position.
- All in all, these factors balance out and you can open the same range from the small blind as you would from the button.
- The fact that you are out of position hurts less and less as stacks get shallower.



## WHAT HANDS TO ALL-IN?

- >50BB: raise to 3x (3BB)
- 25-50BB: raise to 2.5x
- 15-25BB: raise to 2x
- **<15BB**: just go all-in or fold. Even though 15BB seems like a lot, it really isn't! Even if you raise to 2x, putting in 2 of your last 15 BB's is such a big portion of your stack that you can't fold when someone re-raises anyway. So you might as well just go all-in.



# ANTES

- An extra small bet that EACH player must put into the pot EACH hand; these sum to around a big blind
- Come in during the later stages of a tournament; inexistent in cash games
- This gives you SO much more incentive to try to steal the blinds, since now essentially EVERYONE posted a blind
- Don't think of antes in the pot as just “the blinds are bigger”, since you don't have to raise (and risk) any bigger to steal the blinds



# WHAT ANTES LOOK LIKE...



# PREFLOP ALL-INS

- Assume that there are antes now!
- This is reasonable since usually all-in situations only arise in the later stages of tournaments, by which antes have come in
- When you are at 15BB, go all-in with exactly the set of hands you would open (this is not a good approximation, but it will have to do for now).
- As your stack gets smaller, you increase the % of hands with which you go all-in...but the increase is slow until you get as low as the 5BB area...we will look at this more in a future lecture.



# UTG ALL-INS (APPROXIMATED FOR PEDAGOGICAL REASONS)

○ 15BB: 6.2%

AA	AKs	AQs	AJs	ATs	A9s	A8s
AKo	KK	KQs	KJs	KTs	K9s	K8s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s
AJo	KJo	QJo	JJ	JTs	J9s	J8s
ATo	KTo	QTo	JTo	TT	T9s	T8s
A9o	K9o	Q9o	J9o	T9o	99	98s
A8o	K8o	Q8o	J8o	T8o	98o	88

10BB: 13.4%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55

5BB: 33.3%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22



# ANOTHER EXAMPLE OF EXTRAPOLATION: HJ

○ 15BB: 23.4%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

10BB: 28%

5BB: 50.4%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22



# DOES POSITION MATTER?

- When you are going all-in preflop, postflop position doesn't matter.
- Recall that we said your button opening range should be similar to your small blind opening range.
- However, since the “out of position” disadvantage of the small blind is gone, you can shove **MUCH** more from the small blind than you can from the button. You have to go through **HALF** as many people! So you can shove “twice” as large a % of hands (not really).



# 15BB'S FROM BTN VS SB

○ 15BB's from BTN:

○ 55% (we know this)

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

○ 15BB's from SB:

○ 75%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22



# CALLING ALL-INS



# ANALYSIS WITH A8CC

- Opponent shoving 23%:

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

- Need to put in 3000 after which the pot would be 6500, so need 46% equity.
- However, there are 2 players behind, which is a factor to consider.
- A8s has 48% equity...just good enough.



# UH-OH! MONSTER BEHIND WAKES UP?



# ANALYSIS WITH KQHH

○ BTN has 11.8%

AA	AKs	AQs	AJs	ATs	A9s	A8s	A7s	A6s	A5s	A4s	A3s	A2s
AKo	KK	KQs	KJs	KTs	K9s	K8s	K7s	K6s	K5s	K4s	K3s	K2s
AQo	KQo	QQ	QJs	QTs	Q9s	Q8s	Q7s	Q6s	Q5s	Q4s	Q3s	Q2s
AJo	KJo	QJo	JJ	JTs	J9s	J8s	J7s	J6s	J5s	J4s	J3s	J2s
ATo	KTo	QTo	JTo	TT	T9s	T8s	T7s	T6s	T5s	T4s	T3s	T2s
A9o	K9o	Q9o	J9o	T9o	99	98s	97s	96s	95s	94s	93s	92s
A8o	K8o	Q8o	J8o	T8o	98o	88	87s	86s	85s	84s	83s	82s
A7o	K7o	Q7o	J7o	T7o	97o	87o	77	76s	75s	74s	73s	72s
A6o	K6o	Q6o	J6o	T6o	96o	86o	76o	66	65s	64s	63s	62s
A5o	K5o	Q5o	J5o	T5o	95o	85o	75o	65o	55	54s	53s	52s
A4o	K4o	Q4o	J4o	T4o	94o	84o	74o	64o	54o	44	43s	42s
A3o	K3o	Q3o	J3o	T3o	93o	83o	73o	63o	53o	43o	33	32s
A2o	K2o	Q2o	J2o	T2o	92o	82o	72o	62o	52o	42o	32o	22

- Need to put in 2800 after which the pot would be 9300, so need 30% equity.
- There are no players behind, so this calculation is exact. We don't need to add to the "min equity required".
- KQs has 36%! Way more than enough. Despite looking like a hand that needs to get lucky to win, it does VERY well in a 3-way pot.



# WHO DO YOU THINK HAS THE MOST EQUITY? (HINT: YOU'LL BE SURPRISED)







# IT'S AN INTENSE RACE! A COOKIE TO ANYONE WHO GUESSES THE TURN.

The screenshot shows a Texas Hold'em poker game in progress. The community cards on the table are the Jack of Clubs (J♣), the 6 of Clubs (6♣), and the 10 of Hearts (10♥). The pot contains \$9220. The players and their current chip counts are:

- probirs: \$2980
- Mikaroc: \$2980
- Schappuscha: \$2980
- R4IZE: \$2980
- husaberg2009: \$2980
- NiceChiplead: \$2880
- Ornivas: \$0
- Sam7717: \$0
- CutiePi314: \$0

Player hands and percentages are shown as follows:

- probirs: K♥ Q♥ (30.1%)
- NiceChiplead: A♠ 8♣ (35.1%)
- Ornivas: 9♣ 9♠ (34.8%)

At the bottom left, there is a chat window with tabs for Chat, Notes, Stats, and Info. At the bottom right, the "Last Action" is "Dealing Flop". In the top right corner, there are buttons for "LEAVE TABLE" and "VIEW LOBBY".



# EVERYONE IMPROVES! COUNT CARDS...





...OF COURSE CUTIEPI314 WINS.

