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## How To Calculate Pot Odds

You DON'T need to be a "math genius" to understand poker odds...

Not at all.

In fact, you can be TERRIBLE at math (like me) and still be able to use "odds" to your advantage at the no-limit Holdem tables.

There are TWO main things you need to learn right away:

1. The concept of OUTS
2. The concept of POT SIZE

These are easy. Let's start with the first.

"Outs" refers to the number of cards in the deck that will complete (or "make") your hand.

For instance... if you have Ace-King and the board reads Q-J-4, you need a ten to make your straight.

Since there are four tens in the deck, you have FOUR OUTS.

Or... let's say you're holding Q-J and the board reads K-10-5. That means you have an open-ended straight draw-- either the Ace or the nine will complete your straight.

Since there are four nines and four Aces in the deck, you have EIGHT OUTS.

Let's do one more. Let's say you've got 8-7 of clubs and the board reads 2c-Ad-Kc-3s. That means there are two clubs on the board and two in your hand. If one more club hits on the river, you'll have a flush.

There are a total of thirteen clubs in the deck (thirteen of each suit times four suits equals fifty-two cards).

But that DOESN'T mean you have thirteen outs, because you're already using four of the clubs.

Instead, you have NINE OUTS (thirteen minus four). If any of those nine cards hits on the river, you'll have a flush.

OK... so that's how you calculate OUTS. We'll do some more in-depth examples in a minute, but first let's talk about POT SIZE.

Pot size is how much money is in the pot. Pretty simple, right?

There are three main parts to pot size:

1. How much money is already in the middle
2. How much is bet in the current round of betting
3. How much WILL be bet in the current round

Let me explain.

Let's say four players call the big blind of \$4 in a game. That means there's \$16 in the middle.

The flop comes out. You're on the button, which means you're LAST to act. Player 1 bets \$10 into the pot. Player 2 calls, and Player 3 folds. Now it's your turn. What's the current pot size?

The answer is \$36. There's the \$16 that was in the middle first, then \$20 more from Players 1 and 2.

The \$16 is the first part, the \$20 is the second part, and there is no third part since you were last to act.

Let's take another look. Let's say you were SECOND TO ACT, instead of on the button.

Four players call the big blind of \$4, which means there's \$16 in the pot. Player 1 bets \$10, and now you must make a decision. What's the pot size?

Well, it's \$16 + \$10 + UNKNOWN.

Why "unknown"?

The reason is you DON'T KNOW if the two players BEHIND you are going to call, raise, or fold. So you really don't KNOW the exact pot size.

This is a fundamental reason why math doesn't solve all your problems in poker. You must use your INSTINCTS to "guess" and "infer".

In this case, you would try to guess whether or not the other two players would call or fold (or raise) and make your decision then. This is also another reason why POSITIONING in a hand is so important.

One more thing about pot size before we move on...

A lot of players don't know whether to count THEIR OWN MONEY in the actual pot size.

The answer is you count your own money that's ALREADY THERE from

before. In the example, your big blind of \$4 is already in the pot... so you DO use it to calculate the pot size.

Once your money is in the middle, it isn't yours any more. Period.

But you would NOT include your \$10 in the pot size, because you haven't put it in yet. You're THINKING about putting it in.

Make sense?

Let's say you called the \$10 bet from Player 1 and the other players all folded. The turn card comes and Player 1 bets \$20. What's the pot size?

Well, it's \$16 from pre-flop, \$20 after the flop, and now \$20 after the turn.

You DO count your \$10 after the flop because now it IS already in the middle.

OK... so what does OUTS and POT SIZE have to do with ODDS?

The answer is EVERYTHING.

Now that you know these two basics, you're ready to start calculating "complicated" poker odds.

To calculate odds, you need four pieces of information:

1. Number of outs
2. Number of "unknown" cards in the deck
3. Pot size
4. Current bet amount

We talked about the outs and pot size. The other two are very straightforward.

The number of "unknown" cards in the deck simply means how many cards you DON'T KNOW. Before the flop, there are 50 cards you don't know. You only know the two in your hand.

After the flop, there are 47 cards you don't know. You know the two in your hand and the three on the board and that's it.

After the turn there are 46 cards you don't know.

Like I said, this is simple stuff.

And the CURRENT BET AMOUNT is just... well, the current bet amount. It's how much you must put in the pot to "call".

OK, let's review.

Let's say you get dealt J-10 offsuit. You call the big blind of \$6 and so does one other player. The small blind folds. The player in the big blind checks. That means the POT SIZE is \$21 (\$6 + \$6 + \$6 + \$3).

The flop comes out Q-2-9. You've got an open-ended straight draw. Either a King or an eight will make your straight. Since there are four Kings and four eights in the deck, you've got EIGHT OUTS.

There are 47 unknown CARDS in the deck (52 cards minus the five that you see).

You're second to act. The first player bets \$12. That means \$12 is the CURRENT BET AMOUNT.

The POT SIZE is \$21 + \$12 + UNKNOWN. The unknown is what the player after you does...

So there you have it... those are the four pieces of information you need. The only thing you don't know for SURE is the pot size in this example.

Sometimes you'll know the pot size exactly (like when you have good positioning). Other times you'll just have to estimate.

OK, let's do some odds.

THE WAY TO CALCULATE ODDS IS TO COMPARE THE ODDS OF MAKING YOUR HAND TO THE ODDS OF THE POT.

Here's the exact "formula":

(Unknown Cards - Outs) : Outs

VERSUS

Pot Size : Current Bet Amount

If the first comparison is smaller than the second one, that's good. It means that "pot odds justify a call" (or raise).

For instance, if you have 12 outs and there are 47 unknown cards, that means you have ABOUT a 25% chance of "making" your hand.

The odds against you are 35:12, or about 3:1.

Remember... when you see two numbers like X:X, the first number is the chance of one thing happening against the chance of the second thing happening. You'll miss your hand three times and make it once. That's 1/4 or 25% or 3:1.

Now let's say the pot size is \$50 and the current bet amount is \$10. That

means the odds would be \$50:\$10, or 5:1.

It's easiest to look at in the X:X format and not use percentages.

OK, so here's what you've got for this example:

Outs = 12

Unknown Cards = 47

Current Bet Amount = 10

Pot Size = 50

There are 35 cards that WON'T HELP YOU (47 - 12).

So the odds are 35:12 for the cards.

And for the pot it's 50:10. You don't add your \$10 to the first number. Just use the current pot size.

35:12 is about 3:1. 50:10 equals 5:1.

The entire point of calculating odds is to make a good decision. To make a decision of whether or not to call a \$10 bet here, you would compare the 3:1 versus 5:1.

The odds here are IN YOUR FAVOR.

If this scenario played out four times, here's how it would look STATISTICALLY:

- You lose \$10.
- You lose \$10.
- You win \$50.
- You lose \$10.

You lose three times and win once (3:1). When you add your losses it equals \$30 but your wins are \$50, giving you a \$20 profit.

If the scenario happened eight times you'd win twice and lose six times. That means you'd lose \$60 and win \$100... for a \$40 profit.

For real life poker situations, the key is to calculate whether or not you can "justify" staying in the hand.

Let's say you have A-8 and the flop comes out:

K-10-4

Someone bets \$10 and the pot size is \$20. What should you do?

Well, you don't have anything but an Ace high. If the Ace comes on the turn, you'd have top pair. So let's ASSUME that your top pair would be the winning hand.

That means there are three cards in the deck that can help you (the other three Aces). And there are exactly 47 unknown cards in the deck.

So we have our numbers:

Outs = 3

Unknown Cards = 47

Current Bet Amount = 10

Pot Size = 20

Using our formula...

$(47 - 3) : 3$

VERSUS...

20 : 10

So the numbers come out 44:3 (about 15:1) versus 2:1. Should you call?

Of course not.

You're only getting 2:1 for your money but your chances of winning the hand are very slim.

If the hand played out 16 times you would win ONCE. So you'd lose \$150 (15 X \$10) and win \$20, for a total loss of \$130.

You're always striving for good odds on your money and good odds on your hand.

Good odds on your hand means the X:X number is as SMALL AS POSSIBLE... because you want lots of outs. You don't want there to be only one or two cards in the deck that can help you. You want fractions like 47:12, 46:10, 46:8, and so on.

Good odds on your money means the X:X number is BIG. You want 10:1, 5:1, 12:1, and so on.

OK, I'm going to give one more example. See if you're smart enough to figure this out on your own (you may need to use a scratch piece of paper)...

You're second to act pre-flop and look down to see Kc-Jc. You limp-in by calling the \$4 big blind.

Three other players call. The small blind (who put in \$2) folds.

The player in the big blind decides to RAISE the pot to \$8. You call. Two of the other three players call... but one folds.

So now there are four players total in the hand... the guy in the big blind, you, and the two other callers. (Still with me here?)

The flop comes out:

Ac-4s-8c

What a great flop for you. You've got the nut flush draw.

The player in the big blind is first to act. He checks. You check also (which I would NOT recommend doing here, by the way).

The next player bets \$16. The next one calls. The guy who made the original pre-flop raise folds.

So now the action is on to you.

What is the...

Number of outs? Number of unknown cards? Current bet amount? Pot size?

AND MOST IMPORTANTLY...

Should you call?

See if you can figure it out before I give you the answer.

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OK, so the answer is this:

Yes, you should call.

The pot size is \$70. The current bet amount is \$16. The number of outs is 9. And the number of unknown cards is 47.

The pot size was the hardest thing to figure out. Remember... the small blind folded his \$2. Another player folded their \$4. So there was \$6 in the

middle, plus \$32 with the four callers. So \$38 before the flop.

Then there were two players in for \$16 after the flop, which equals \$32.  $\$38 + \$32 = \$70$ . Luckily, there weren't any other players left to act after you in this exact round of betting.

The number of outs is simple. Thirteen clubs in the deck minus the four you already see equals nine. And the number of unknown cards is 52 minus the five you see... which equals 47.

Plugging those numbers into our handy "formula" gives us:

$(47-9):9$  Versus  $70:16$

That's equal to  $38:9$  versus  $70:16$

Now you might be wondering, "How the hell am I supposed to know what 70 divided by 16 is or 38 divided by 9? It's not like I'll have a calculator handy at the table!"

True.

But you don't have to know the EXACT numbers. All you need to know is if the second one is bigger than the first. And that's pretty easy.

When I do it, here's what goes on in my head:

"38 over 9 is about the same as 36 over 9, which equals 4. That means 38 over 9 is 4 and  $\frac{2}{9}$ ths.

70 over 16 is closest to 64 over 16, which also equals 4. That means 70 over 16 is 4 and  $\frac{6}{16}$ ths.

Now I just have to compare  $\frac{2}{9}$  to  $\frac{6}{16}$ .  $\frac{2}{9}$  is like  $\frac{2}{10}$ , which equals .2.  $\frac{6}{16}$  is kind of like  $\frac{6}{18}$ , which is .33. So the second one is bigger."

And that means the call IS justified.

Now let me clarify something...

In this example the two numbers are VERY close (4.22 versus 4.375). Usually they WON'T be that close. Usually they'll be something like 3.3 versus 8.2 or 2.5 versus 4.1.

That means in MOST cases you won't have to do all that fraction stuff. OR, even if you DO have those fractions, you won't need to calculate it. You'll probably just consider it "about even" and make your decision based on other factors.

All right... so that's basically how you calculate pot odds. Of course, there's more.

You also want to know IMPLIED ODDS. Implied odds aren't as math-related. Implied odds basically pertain to hands where you can "bust" or "surprise" your opponents.

In the last example, you were on the nut flush draw, because you had the King of clubs and the Ace of clubs was on the board.

If your opponent was ALSO on the flush draw and he had the QUEEN of clubs, this would be very good for you...

Because if another club hit on the turn, you and your opponent would both have flushes. But yours would be higher.

In this case, your opponent would likely go "all-in" and you would win a TON of chips.

So even though the "odds" on your money are 4.375:1, they're actually higher because of the "implied odds" of your NUT flush draw.

Besides implied odds, you'll also have to think about the "unknown" pot size, as we discussed. Many times you just won't KNOW the exact pot size, and will be forced to guess.

Also... you must be careful to consider what your OPPONENTS are holding...

Let's say you're holding As-5h and the board reads: 8h-Qh-2h

You have the flush draw. And the odds of "making" it are good. But that doesn't mean you want to calculate the nine other hearts in the deck as your "outs".

Why?

Because all your opponents need to BEAT you is a heart higher than a FIVE. And someone most likely has it.

The point is, when you calculate OUTS, you want to calculate outs based on making the WINNING HAND.

And obviously there's no way to know for sure what the winning hand will be... unless you've got the nuts.

So as you can see... there are a LOT of different factors to take into consideration.

Calculating pot odds is a useful technique for the right situations. Over the long term, it can become very handy and will help you make sound, logical decisions at the poker table.

Of course, pot odds is only one small aspect of "poker math". There are dozens of calculations you'll want to make at the table to quickly,

consistently, and easily dominate online poker.

And the best way to achieve this is with an advanced odds calculator. "Holdem Genius" is the world's most advanced odds calculator... and it's available FREE for a limited time. Just visit this website to learn more:

[http://www.superpokeraffiliates.com/\\_page?data=502906\\_24\\_6\\_107\\_NiQvR01nL2h6aFE4TQ%3D%3D](http://www.superpokeraffiliates.com/_page?data=502906_24_6_107_NiQvR01nL2h6aFE4TQ%3D%3D)