

Poker Odds - What Are They?

This text will simply look at what **poker odds** are, what they mean and what they affect. If you're simply looking for some quick tips then the [Poker Tips for Texas Hold'em](#) article on the [Poker Blog](#) may be more suitable.

If you are interested in learning the core odds, lets go! So, let's start with some basic definitions:



"Seven to One"

When a bet is made, and you're offered "seven to one" (usually written "7:1"), this means that the other person will pay you 7 if you win, and you will pay him 1 if you lose. 7 what or 1 what? Could be dollars, could be Euros, and could be cookies. Could be anything! The point is that he will pay you seven times as much if you win as you have to pay him if you lose.

So if someone offers you 7:1 on a race horse, and you take the deal and bet \$20, he will pay you \$140 if you win and you will pay him \$20 if you lose. As a sidenote, if it's a bookmaker you're dealing with you will usually give him your \$20 before the race, and he will then pay you \$140 plus your \$20 back after the race, i.e. \$160. So if you think your horse is more likely to win than the odds you get, you should take the bet.

And if someone offers you 6:1 after the river card in Texas Hold'em, and you think you have better odds than that to win the pot, you should call. Of course, it's difficult to know if your hand is the better than your opponent's, but you should at least have some idea of how likely your hand is to be best, but it's still a matter of judgement. To avoid having to discuss judgement calls, let's look at a situation where you can be certain:

You're on the turn in Texas Hold'em, and you're holding **Q♥ 9♥** in last position.

The board is **A♥ K♥ 7♠ 4♠**

The player before you bets. He's a tight poker player, and you know he's unlikely to bet without at least a pair of kings, and likely a pair of aces, here. Your only chance of winning this pot is if the last card is a third heart, giving you a flush. There are nine cards that you have not seen out of 46 in the deck (counting from the turn, not the flop) that will give you this flush, so you have about a 9/46 chance to hit on the river. Another way of putting this is that there are 9 cards that will make you win, and $46 - 9 = 37$ cards that will make you lose. The odds are therefore 37 to 9, or just about 4:1. If there is more than four times as much in the pot as it costs you to call, you should continue, since you have a profitable situation!

To give another example: You have T♠ 9♣ and the board on the turn is 9♥ 8♦ 8♠ 7♣. You believe that your opponent is holding K-K or A-A. To determine your odds, we have to first figure out how many cards will make you a winner:

A jack will give you a jack-high straight, so the four remaining jacks are good for you (4). Furthermore, any of the four remaining sixes will give you a ten-high straight, so they are good as well (4). A ten would give you two pair, but won't help if he has an overpair since he would have a bigger two pair, but a 9 would give you a full house (2).

$4+4+2 = 10$, and $44-10 = 34$ will mean that we lose. Our odds to win or split are 34:10 against, in other words, or 3.4:1. If the pot is \$100, and your opponent bets \$40, the pot odds will be 3.5:1 ($140/40 = 3.5$) which is enough to show a profit from calling.

Many players mistakenly believe, even some experienced players that you're wrong to continue in situations where you're not favourite to win. This is usually good advice, but it's advice that doesn't take into account any of the circumstances other than the (current) strength of your hand and what you believe your opponent to hold. In the example above, with the flush draw, you should definitely not fold if the pot is laying you better odds than 4:1. You're a huge dog (meaning that the poker odds are strongly to your disadvantage) but you will win the big pot often enough to make it worth continuing. When the pot offers you high odds, you don't need to win often, is the lesson here.



Let's turn to an odds example outside poker, again: If you and I were betting on the roll of a die, and you bet \$1 that it would come up a 6, how much would you need me to pay you if you wanted to make a profit from the bet? Well, my odds of winning are 5:1; there are 5 ways that I can win, and only 1 way that you can win. You need, therefore, odds that are better for you than 5:1. If I pay you \$6 when you win, and you pay me \$1 when I win, you will show a long-term profit, because if we roll the die 600 times, for example, you will win on average 100 times ($100 * \$6 = \600) and lose 500 times ($500 * \$1 = \500). The money that you stand to win, as compared to the amount of money that you need to invest to be able to win them, is what constitutes your **pot odds**. In the above example with the flush draw, your pot odds needed to be better than 4:1 to continue - the pot needed to be at least four times as big as what you had to pay to call. It's a way of qualifying your investment, you could say.

For more great poker advice, tips and strategy see the FirstPokerTips [Poker Blog](#)

Implied Odds: Gimme All Your Money!

If you understand what is meant by pot odds in poker, you should now be ready to absorb the idea of implied odds. It's easy, really - it's based on the idea that if you're drawing to a hand (let's stick with the flush example above) you are likely to, on average, win more than what's in the pot right now if you do make it. If you do hit your flush on the turn or the river, isn't it likely that you can trick your opponent into giving you a little more of his money? If he has a pair of aces and you have a flush, you should

be able to get at least one or two more bets from him. If he has two pair or a set, you should be able to win lots!

That's the simple idea behind implied poker odds - you can sometimes make a call where the pot odds aren't really sufficient (a "loose" call) but you do it because you figure that in the rare cases where you hit your hand, you will win more than what's in the pot right now. If you think that your opponent has AQ, in the hand above, you will often win at least three more bets from him on the turn and river if you hit your flush on the turn: he bets the turn (1), you raise, he calls (2), he checks the river, you bet, and he calls (3). With an extra three bets waiting for you if you make it on the turn, this future profit will make somewhat loose calls on the flop often correct.

Implied odds is the name of the game when it comes to no-limit. Unlike limit poker, a powerful hand that hits in no-limit can win your opponent's entire stack. An example of this that is often used to demonstrate the power of implied odds, is when you're in the big blind, playing deepstack no-limit hold 'em, and the button raises three times the big blind. He accidentally flashes his cards, and you can see that he holds A-A. You look



down and see that you have pocket sevens. Should you call? Yes! You know that you're terribly behind to his aces, but - and this is the key - those rare times that you do hit your set on the flop, you are likely to win his entire stack. That will usually more than make up for all the times you lose your initial investment of three big blinds.

However, and this is very important, don't put too much stock in implied odds in poker. You can't know for sure that your opponent will pay you off when you hit (how often will he actually flash his pocket aces at you?), so be careful.

How do I Know What My Odds Are?

Well, figuring out your immediate pot odds should be easy. You know the size of the pot (if you're playing online it should say somewhere, and if you're playing in a casino, you can either manually count the chips or ask the dealer), and you know how much your

opponent bet. Your pot odds are size-of-the-pot to amount-you-have-to-pay-to-call. If the pot is \$50, and your opponent bets \$50 ("bets the pot") the pot will grow to \$100. You will have to pay another \$50 to call, meaning that your odds are 100:50. Since it's only the ratio we are interested in, we can simplify 100:50 to 2:1. So if your opponent bets the pot, your odds are 2:1 on a call (this is always true of course, regardless of how big the pot is).

Figuring out what your odds of winning are is more difficult. There are only two extreme cases where you can be certain of your odds; When you're drawing to the nuts, and

when you've seen your opponent's hole cards. All other cases include some degree of hand-reading and/or guessing. For example, in the first example with the flush draw, we were drawing to the nuts. If another heart (that isn't the 4♥, making a full house possible) comes, we can be entirely certain that we have the best hand on the table.

This article isn't intended to help you figure out what your odds of winning are, however. There are books that will help you make estimations ("Harrington on Hold 'em vol I and II" does a good job of this in no-limit scenarios) and experience will take you a long way here. I include a list at the bottom of this poker odds article to give you some idea, however, but it requires that you have some idea of what your opponent holds.

Being Realistic About My Odds

Before I unleash the list below, I wanted to add a word or two about being unrealistic about your odds: When you're drawing to anything but the nuts, there is always a small risk that you will not improve to the best hand, but merely a better hand than what you have before. This is fairly disastrous when it happens, since you're now not "only losing" the cost of calling, but likely losing a whole lot more because you're raising with what you incorrectly believe is the best hand. When the risk of this happening is small, for instance when you're drawing to a second-nut flush with suited hole cards, you can mostly discard the risk. But when you're drawing to overcards, for instance, you should be very suspicious. But, as I said, I don't intend to try to teach you how to exactly count your outs based on hand reading, number of people in the pot, re-draws, etc., that may be a topic for another article. For today, let's stick with understanding the basics.



Some Common Poker Odds

Figuring out your odds of winning is a matter of "counting your outs". When, in the first example with the flush, I said you had 9 cards that would make your hand the best, that's the same as saying that "you have nine outs." Any card that will give you the best hand is an out. Sometimes it's easy to count your outs, especially when you're drawing to the nuts, and sometimes it's virtually impossible. Anyway, the numbers below are based on some assumptions, which in turn are listed next to odds. I've also not included any odds to tell you what your chances are of hitting a hand with two cards to come. I know that a lot of people like to know these numbers, but I'm not sure why because they don't help, except in the fairly uncommon scenario where either you or your opponent are all-in already on the flop. These poker odds are assuming that you're on the turn and want to see a river, although they are close enough approximations to use on the flop as well. So, without further ado:

Open-Ended Straight Draw: 4.8 : 1

For example, 8-7 on a A-9-6-2 board. You are drawing to 8 outs - the four fives, and the four tens, these will give you the nuts. These odds of winning presume that there is no possible flush on the board, and that you're drawing to the pure nuts. If you have 7-6 on a A-9-8-K board, the tens may not be outs for you, as they could possibly make someone else a bigger straight (someone who has QJ).

Four to a Flush: 4.1 : 1

Like the first example above. The assumption is that you're drawing to the nut flush, e.g. no one can make a higher flush than you. This is especially important if you only have one card to make the flush, i.e. your two hole cards are not suited. If your hole cards are suited, and there are two more of your suit on the board, you can most often treat any flush as the nuts since it's very rare that you will be up against another person with two cards in the hole of your suit. If you are drawing to a four flush on the board, however, you should be extremely careful if you do not have the ace. Poker players like drawing to flushes, and poker players like playing aces - these two facts combined make your odds of winning a lot lower if you chase to anything but the nut flush in these cases.

Inside Straight (Belly Buster): 10.5 : 1

Again, I'm assuming that you're drawing to the nuts, e.g. with 8-7 on a board of A-9-5-K. Any of the four sixes will give you the nuts. Unless you use both your hole cards to make the straight, however, you will not be drawing to the nuts. If the board is A-9-6-5 and you have 7-2, any 8 will give you a straight, but it's not the nut straight; someone with T-7 will have the nuts.

One pair, drawing to two pair or trips: 8.2 : 1

If you have J-T on a board of A-J-8-3, and you strongly suspect that you're up against a someone with a pair of aces, you have five outs to beat him: Three tens (giving you two pair), and two jacks (giving you trips). Your odds here are based on the assumption that your opponent does not have AJ or AT! This is a dangerous assumption to make, and you should realistically have more than enough odds than 8:1 to profitably make this call to make up for the times when you are drawing to only half as many outs as you think you are.

Overcards on a ragged flop: 6.7 : 1

Now we've really entered a dangerous assumption. If you have KQ on a board of 8-5-2, and you think your opponent has a pair of eights, but not a queen or a king kicker, you have six outs (any queen or king will make you a better pair). The odds of 6.7 - 1 only hold true if your assumption is correct. It will often be the case that you're wrong, however, so in reality you need to discount your outs severely.

Drawing to a set: 22 : 1

For example, if you're holding 7-7 on a A-K-9-2 board, and your only saving grace is a third 7. This is a really farfetched draw, and my only reason for even including it is to show just how farfetched it is. I have (almost) never seen a pot big enough to warrant drawing to a set. Fold in all but the most extreme pot sizes.

Drawing to X outs: (46-X) / X : 1

This is the generic formula. If you're another draw than the ones I've listed above, and want to figure out your odds for it, you do this: Figure out your number of outs (you're on your own there), then take 46 minus this number. Divide the result by the number of

outs, and voila - you have your odds. For example, if I'm drawing both to a set and to a flush, e.g. I have reason to believe my opponent has two pair, and I have AA, with four to a flush, my outs are any ace (giving me a set) plus 9 flush cards (giving me a flush), totalling 11 outs. This gives:

$$46 - 11 = 35.$$

$$35 / 11 = 3.2$$

My odds of drawing a winner are 3.2 : 1

Further Reading

For more on poker odds and implied odds in general, see "Theory of Poker" by David Sklansky. For a good discussion on how to figure out your poker odds in No-Limit Texas Hold'em situations, I refer to "Harrington on Hold 'em", volumes I and II, by Dan Harrington and Bill Robertie. For more discussion on counting your outs and specifically how to discount them, see "Small Stakes Hold 'em" by Ed Miller, David Sklansky and Mason Malmuth.

Room	Rating	Free Bonus	Our comments	More
	★★★★★	150% up to \$600	Great function to alert you to free tournaments	
	★★★★★	100% up to \$500	Largest poker room in the world	
	★★★★★	150% up to \$600	Accepts US Players	
	★★★★★	75% up to \$250	Beautiful live 3D interface	
	★★★★☆	300% up to \$600	Free token for New player freeroll tournament	
	★★★★☆	111% up to \$444	The best for regular cashback promotions	
	★★★★☆	100% up to \$400	Has very easy players to win from	

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