

Jason Hitchings (00:00:00):

This is part three of the Options education series. We're calling Mastering Options. Today we're going to be talking about straddles, strangles and time spreads. So if you've watched the previous classes, then you know that I'm Jason Hitchings, I'm the CTO at CML. I started working with PHE about 15 years ago, a company called Live Vol, and that's when I first started getting into options analytics and options trading. I was trained by some floor market makers that were the founders of the company and I have been trading options ever since. One of my first big goals at that company was to allow us to process 200,000 accurate option calculations per second. So I did deep dives into all the different models, all the buy no mill trees and all that good stuff back in the day, and I've been trading options ever since.

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So this is the breakdown for today. We're just going to talk about long straddles and long strangles. Then we're going to get into short straddles and short strangles. We'll go pretty deep into long time spreads and discuss different strategies for capturing upside movement of a stock over time. And then we'll touch briefly on short time spreads and then I'll give a quick summary and I'll answer any questions that are still remaining. So before I go into the formal presentation, let me just kind of go through the standard disclaimers. Just take about a minute. This is not a solicitation to buy or sell any security ever. This is not advice. You should read the characteristics and risks of standardized options. The results here are provided for general information purposes. As a convenience to the viewers, the materials are not a substitute for obtaining professional advice from a qualified person, firm, or corporation.

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Trading futures and options involves the risk of loss. Please consider carefully whether futures or options are appropriate to your financial situation. Only Risk capital should be used when trading futures or options investors could lose more than their initial investment. Past results are not necessarily indicative of future results. The risk of loss in trading can be substantial. Carefully consider the inherent risks of such investment in light of your financial condition. Okay, so if you are in this part three, then hopefully you have a pretty solid background in options trading or have watched the previous two classes. You can always go back and watch those. But yeah, you should have a good understanding of looking at an option montage while this strikes next expirations bid asks and all of those things, you should know how long and short calls and puts work. You should be familiar with reading a stock p and I chart. That should be pretty familiar. We're going to use quite a few of them today and you should additionally understand long and short call and put spreads and understand how the delta and implied volatility would affect all of these different types of positions.

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So so far we've been talking about calls and call spreads, puts and put spreads in the classes. So far all of these are directional bets. In each case we are hoping that the stock will move up for call or call spreads or down for in input spreads.

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As we know, all of these positions have different deltas and at the money option delta is close to 50. And as we know about Delta, one of the important definitions of Delta is how much does your position change in value, your option position for a \$1 change in the underlying price. So when we have an at the money call, we have about a 50 delta and that tells us for that contract that if stock goes up a dollar, we expect to make about \$50, about 50 cents per share. If we have an at the money put that would have a negative delta, meaning if the stock goes down a dollar, we'd expect to make about 50 cents per share or \$50 per contract and vice versa. So this type of trading, you constantly have either positive or negative deltas. If you have a spread, then the total number of deltas you have is going to be less

because you might have an at the money call that has a 50 delta and you might sell an out of the money call that out of the money call could have a 10 delta or a 30 delta, but let's just imagine as a 25 delta and you can actually add up the deltas in your position and from those you can say how your overall position is going to change even if you have lots of options and lots of expirations at least for the next dollar change in stock.

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So if you're long the 50 delta call and short the 25 delta call, well then your net long 25 deltas, that means if the stock goes up a dollar that your position is probably going to change about 25 cents per share or \$25 per contract. So that's fewer deltas than a naked option. But if you're long the calls and you're still long deltas and even if you sell spreads, you're still directionally trading, you're just hoping it doesn't go.

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This gives you a sense of the way you can think about your portfolio. The way you can think about your delta is you can either be long delta or short delta and you're making a directional bet on which direction the stock will or will not move and that's going to directly affect your p and I. The question becomes what happens if you own both a call and a put? So the call deltas are going to be positive and the put deltas are going to be negative. And if those two are both at the money options, then they're probably going to both have about a 50 delta one's going to be positive 50 delta one's going to be negative 50 delta.

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What happens in that position? So if the stock goes up a dollar, your call is going to go up about 50 cents per share and your put is going to go down about 50 cents per share. And so your overall position, you've made 50 cents in the call and you've lost 50 cents in the put. So there's been nothing that's happened in terms of the first change, the first dollar of change in the stock price. But if you bought a call and you bought a put money doing it, so when stock moves the first dollar, you make nothing one way or the other and it costs you money to put on this position, then what's the point? What have you accomplished? This position right now is what we would call the delta neutral position. It means the deltas are roughly zero, that as of right now you don't have a strong bias for the stock to go up or down in terms of how it's going to affect your p and I. But let's dive in a little deeper.

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So if you have the call and the put, as we mentioned, one's going to win, one's going to lose, so what's the point? So what do we know about calls? What's the most you can possibly win? If you're long a call, well potentially have unlimited upside, right? There's not really an upper limit to how far a stock can go up in value and so therefore there's not an upper limit to how far the call can go up in value. Call is giving you the right to buy the stock at a lower price if the stock has gone up. So you can have potentially unlimited upside potential with the call. And how much is the most you can lose? Well, anytime you're long options, the most you can lose is the amount that you bought the option for. So you have a fixed downside and you have potentially unlimited upside. Here's a kind of little snapshot p and I chart. Stock movement is up to the right down to the left, so it's flat, this is the breakeven, you're underwater, you've lost money up until you hit your strike price and then you start making some money back. Eventually you get over the cost of the initial option and then you start being in the positive territory.

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How about a put? Well, essentially the same thing. You can make money as the stock drops. You can sell it at a higher price up until the stock hit zero. So you have a lot of potential gain as the stock goes down

and the amount you can lose is still just the amount that you initially put into the position. So you have a fixed downside and a ton of potential as the stock moves downward. I kind of call that downside potential.

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So this is the put p and L chart. This is the call p and I chart. What happens if you combine these two? What does that look like? Okay, so here's our call, here's our put. What does this combined look like? Well, if we're buying both a call and we're buying a put, then we're buying two different options. And so that's going to cost more than buying an individual option. And so we're going to represent that by showing a higher breakeven point on our little combined p and I chart. So whatever else happens, we're going to have to make money, we're going to have to recover the value of two different options instead of just one option. So we know we're going to have to get more out of these one way or another. So I'm showing the call in green, I'm showing the put in red, and when you combine them kind of overlay these on top of each other can see that the puts still making money as the stock goes down, the call is making money as the stock goes up. What are these flat spaces? So this is the area for the call below the strike price where you've hit your maximum loss but there's no change. There's no change in value as stock goes down an extra dollar if you own a 50 strike call and there's no difference for you if the stock's at 40 or if the stock's at 30.

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So these flat lines, you've already hit your max loss. Same with the put if the stock's too high. So when we render these on the chart, when you combine them, you really don't need to see them anymore, especially here because they're getting canceled out because your call is not going down in value anymore, but your put is going up in value. So the call is not affecting the position, but the put is we can actually just zap those out of the chart. And this is what we have in terms of our combined call and put p and I chart, we call it a straddle. This line represents at the money price or the strike price. This would be they both would have the same strike price wherever the stock price is and you can make money if the stock goes down or up in theory. But how do you do that if it's delta neutral to start?

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Well, we can see it with a small movement to the right or to the left. We're still in this negative territory. We still haven't gone far enough in either direction in order to make money with the call or the put. But if the stock moves substantially, then eventually the call can start to become valuable enough that it's worth more than both the original call and the put cost you. And same if the stock moves down far enough, eventually the put can be worth enough that it covers the entire position and then you can start making some additional money. So what does that tell us about the delta before the call and the put? Were both 50 delta, but if the stock price actually can result in our position increasing in value, then they can't both be 50 delta forever. And if we think back to some previous classes, what happens to an option that's in the money? If you have a call that's \$10 in the money versus a call that's \$10 out of the money, which one's going to have a higher delta? Well, one definition of delta is the chance that an option will finish in the money and so it stands to reason. If you're buying an option that's already in the money, then the chances have to be higher if it finishing in the money. So therefore an option that is in the money is going to have a larger absolute delta. So a call is going to have a larger positive delta and an in the money put is going to have a larger negative delta.

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The further in the money your option gets, the more the call will start to act like stock just pure stock where every time the stock goes up a dollar your delta is going to go higher and higher and higher. It's going to go from 50 to 60 to 70 to 80 to 90 to 99. At that point, when the stock goes up a dollar, your

position is going to go up 99 cents. So it's going to mimic as if you owned the stock outright. And same in reverse. If you own a 50 strike, put a stock goes from 50 to 40 to 30 to 20, it's going to be a lot like you own short stock. Every time the stock goes down a dollar, you're going to make 99 cents in your options position.

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So we can see that initially you're starting off with a delta neutral position, but as the stock starts to go up, the call delta is increasing and the put delta is decreasing and all of a sudden you have a long delta position. So once the stock starts going up a little bit, you are no longer unbiased about what direction you want the stock to move. You now have a strong incentive for the stock to continue moving up. That's going to be the quickest path for you to get into this profitability zone. And same with the stock starts moving down. Your negative deltas of this position are going to increase, increase, increase. The call delta is going to move towards zero. The put delta is going to move towards negative 100 and the further that goes, the more incentive you're going to have. There's a term for how delta changes over time and that term is called gamma. And I'm just going to mention it right now, that gamma will help tell you how much your position is going to act like stock as it changes how much the delta is going to change over time. And then we'll touch on that more in the fourth options class.

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Okay, so let's look at a real example. Let's look at the money straddle and then how am I going to decide what company to look like? I could just pick a ticker at random that I know, but let's use trade machines to find something more interesting. And so I'm going to pick a time range of the last few months.

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I think that's more representative. I'm going to look at the last three or four months of data because the market's been in a different paradigm than it was for the couple of years before that. So I'm going to look at that pretty recent stock history. I'm going to look at options that are going to be expiring about 14 days out. And again, we can never, with trade machine, we can't invent options that don't exist. So it's going to look for the options that are closest to 14 days out. It could be 10 days, it could be 23 days. It's going to look as close as it can. I click on my portfolio view. I've created a portfolio of the NASDAQ 100 stocks. I'm going to click a straddle and I'm going to say never trade earnings. I don't want a couple big earning moves to distort how the entire position looks as I'm looking at individual tickers. So I'm going to say never trade earnings. Additionally, I'm going to double check my deltas. If you click the little settings gear on the top right, it's going to open this back test settings window. And if you're testing multiple tickers, then it's the center delta that is going to determine the deltas in your position. So the first leg is going to be the top of these two and the second leg is going to be the bottom. So this will be the call delta and this will be the put delta in the straddle.

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So I let those run and it starts giving me results, takes a few minutes to do a hundred back tests for these different straddles and then I just start looking through the results. Then I kind of pick out some ones that look pretty attractive. So M-N-S-T-A-D-S-K, PayPal. So we see these different things and I like the win rates and this has a high percentage return ROI. So I'm going to go ahead and pick this as my example, the MNST. Okay, so I pull up an option montage. I was doing this around the six or so in this 22nd of April was about 18 days out at the time. Maybe that makes it on the fourth.

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So here's our montage. We have calls over here and we wanted to do a 50 delta straddle. We can see these deltas as we talked about the in the money. Deltas are much higher. They go towards 50 delta as you go to at the money and then they approach, they go lower and lower as you get further and further

out of the money. And then vice versa in the money puts have a higher delta and they go lower. We want something around 50 deltas. So we have 53 and 47, 53 and 47 on this side. So 82 and 83 are both pretty much equally close to the at the monies according to the delta picture. So I'm just going to go ahead and pick the 82 and I'm just going to do a single contract just to make it real and just single contracts are a little easier to see the p and I's on. And the markets were two 60 at three and two 20 at 2 75 and I got filled at two 90 at two 60. So my overall position is costing me \$550 to hold this straddle. So we know that this is what the p and I chart's going to look like. This is where our puts making money. This is where our call is making money.

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So what's our break even? So it's costing us \$5 and 50 cents per share to have this position and either the call's going to make money or the puts going to make money, but they're not both going to make money and both have the right to either buy or sell stock at \$82. And so we're going to need the stock to go up or down \$5 and 50 cents to break even. So we've drawn this line here and it's about \$5 and 50 cents down from 82 or about \$5 cents up from 82. So that's our break even where we're going to actually start making some money. Anything in this zone, we've lost some amount of money. Worst case scenario is 82 is the call and the put are both worth zero. So now we can just map this out. Every time the stock goes up a dollar, we make a hundred dollars in our position on the call and vice versa with a put in terms of where we land at expiration. So this is a p and I chart of what the position's worth that expiration.

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So we can see if it's at 82 we hit our worst case scenario, which is we lose the whole value of both options and as we go up around 88 50, we crest through our 87 50 we crest through our breakeven and then we make 50 bucks at 88. If the stock goes all the way up to a hundred, we've made 1,250 bucks and same in reverse. If it goes all the way down to \$64, we've made \$1,250 on the put. And that's how this p and I chart's going to look for this example. So we can make money if the stock goes up or down because the deltas actually change, it starts delta neutral. But as the stock goes up, we start being long deltas and as the stock moves down, we start becoming short deltas and so we can actually can make money because delta is not static. Delta tells you how much your position changes right now for this current stock price, but those deltas change over time.

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You can describe the change with something called gamma that we'll talk about later. Okay, so is that the only way to make money with the straddle is for the stock to move a lot in either direction? What happens if the implied volatility of the options goes up? Does having options with higher implied volatility, does that make them more expensive or less expensive? So before we looked at some distributions and we said, okay, so if there's some theoretical stock and that's the trading price of the stock, well when the volatility assumption is low, then the stock is expected to kind of stay in a closer range. And when the stock volatility is high or the expected volatility is high, then the market's expecting a wider range of movement.

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If you need the stock to move \$5 and 50 cents, then a wider range of movement means more chances to make profit because the more chances that the stock's going to move at least \$5 and 50 cents. So here's what the low volatility assumption, there's these kind of little pockets of profitability and this is with the higher volatility assumption. We have these bigger pockets of profitability. So if the market's assumption about implied volatility go up, then this is the future the market sees. You see more chance of profit and more value in the options and that can just be the potential of movement. It doesn't have to be any

actual movement. So if you see a big hurricane approaching the east coast, all of a sudden you might see the options in Home Depot start to get very expensive because there's a chance of a big hurricane that's going to do a lot of damage to property and there's going to be a lot of people that are going to local hardware stores and buying things to fix up their home. And it could mean a lot of sales for those companies. It doesn't mean that anything's actually going to happen and it might just be as people are watching the weather and they see a tropical storm forming off the east coast somewhere, those options could start to get more expensive. That's the market. Looking at the potential for movement in the future, it doesn't mean that there actually is movement. Home Depot might not change much in value even if the options start changing in value.

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So when we look at this particular position, we see that the implied volatility is around 36. What happens if there's a rumor of some kind of deal that MNST might get bought out or something else and the options start getting expensive? Well let's plug it in. Let's say, okay, right now we're starting at a 36 implied volatility for these options. The market is pricing into these options, an annualized movement of this stock of around 36%. Now it only has 14 days to move that much. So they're not saying it's going to move 36% in 14 days. They're saying it's going to move at a clip of roughly 36% per year over the course of the next 14 days. So when we plug this into an options calculator and we plug in our volatility assumptions and the days expiration and the exercise price, it tells us what it thinks those call input options are worth and they line up well.

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So it's saying that the midpoint of this call is around \$2 and 80 cents and that's right smack in the middle and the put is pretty close too. Really it's like 30 cents up and down. So the option calculator is agreeing with the thinkorswim montage very closely. So what happens if we go from a volatility assumption of 36 and we crank that up to 50? Well, if you owned both of these options, then you'd be paying \$5 and 23 cents if you could get them at the midpoint. If all of a sudden the market thinks that the stock might move at 50% per year, that position's now worth \$7 and 27 cents even if nothing has changed. So in that sense, you own volatility, your long vol because as the volatility assumptions increase, the value of your position can go up and in this case your position would increase about 39% in value from that move from 36 to 50 vol. So you might've heard someone say that trading options is trading ball and it's very true whether you're long or you're short, every option is tied to the volatility. That's how the options are priced.

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So when you have this straddle, you can make money either through real movement, real volatility of the stock, hoping it goes up more than five 50 or down more than five 50 or by an assumption of future movement if that increases faster than the time value of our position decreases. These are long options and so we know that once you're at expiration, the remaining time value and the option is going to be zero. Any value that's left is the intrinsic value at that point. If you have the right to buy or sell this MSTN stock at \$82 and it's the day expiration day and it's still at \$82, those have no option, no value, there is no premium, no time value left in those options. So time when your long options is always working against you, but if the volatility assumption increases, then the options can still go up in value.

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Now we touched on this before, but we know that as the stock goes up or down in value that we're actually going to be not exactly delta neutral. We're going to be slightly longer, slightly short. Deltas we're oftentimes if you're trading as stock, if you're trading the SPY, you might have all the strikes you want and be able to get very close to add the money, but it's frequently the case that there might be a

stock that's trading at \$11 and 10 cents and the choices for which strikes are the 10 strike or the 1250 strike.

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So if you wanted to buy a straddle, you're going to have to choose either the 10 strike or the 1250 strike. And so if you choose the 10 strike, well then the call's going to be a little bit in the money and the puts going to be a little bit out of the money and you're going to be leaning a little bit long. So even though you're buying a straddle, you're going to be, your position's going to have positive deltas and the way to make money for you is going to be for the stock to go up. And the same is true if you buy a straddle that's a little above the stock price, then the puts are going to be a little bit in the money and you're going to be leaning a little short because the best way for you to make money is for the stock to go down.

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So that's something to think about, but there would be another choice if you wanted to benefit from the volatility of the stock and you didn't want to lean short or you didn't want to lean long, you don't have to have the call and the put B on the same strike. In that scenario, if the stock was at 1120, you could buy a put at the 10 strike and you could buy a call at the 1250 strike and both of those options would have lower deltas, but they'd be much closer to canceling out. Your put might be 40 delta and your call might be 37 delta or something, but you'd be much closer to delta neutral. So let's look at an example of that with this stock that we're following. So instead of buying both the call and the put at \$82, we're going to buy the call at 86 and we're going to buy the put at 78. So our options are going to be about \$4 out of the money and they're going to be fairly balanced.

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It's saying that the delta of the 86 strike is around 31 and this delta is around 25, but those are pretty close and we could choose to have a less balanced, we could have the 79 or something if we wanted to balance this out more, but we're just going to choose options that are \$4 away from at the money and that's going to get us pretty close to a delta neutral position. So we see that the 86 call is worth around a buck 25, the 78 puts round worth around one 13. So we can combine those together to see what our total cost of this position looks like and it's around \$2 and 38 cents. And if you recall, that's less, that's less than the two at the money options were. As we know at the money options, we'll always have the most time value because they're going to be the most sensitive to movement of the stock or the underlying because of the most sensitive, they can capture the widest range of possibilities and that's what options are all about. So as you go further out of the money, there are going to be less valuable options.

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So we have this position when they're not both the same strike we call it if they're both out of the money, we call this position a strangle. So now that we have a call at 86 and a put at 78, what's the worst case scenario? Well, we own options and it's very possible that neither one of these ends up in the money. So for the call to be in the money, the stock has to go above 86, but for the put to be in the money, the stock needs to go down below 78 because again, if stock's at \$80, having the right to buy it at 86 is like having the right to buy a \$25,000 car at \$30,000 that has no value. So in this range between 78 and 86, these options will have no value in which case we're going to lose the entire amount we invested in terms of the break even, well, we're going to need to make either \$2 and 38 cents on the call or \$2 and 38 cents on the put to do that. Stock's going to have to go \$2 and 38 cents above 86 for the call to have that value, or it's going to have to go \$2 and 38 cents below 78 for the put to have that value.

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So the breakevens are those two price points, and the best case scenario is that the stock either goes to zero or the stock goes to 500. In theory, you have more upside with the call, but practically speaking, you have a lot of good potential either to the upside or to the downside if stock moves a lot. So we see our worst case scenario is we lose the \$238 per straddle, we need to be \$2 and 38 cents above or below the call or the put, and we have essentially unlimited upside and we have a ton of downside potential as well. Okay, so let's chart this out. Okay, so 78 to 86, that's the range

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Where we get no value from either option. So we kind of know we're going to have some worst case scenarios down here. In order to break even, we're going to need to be \$2 and 38 cents below 78 or \$2 and 38 cents above 86. So we can actually just draw those little hash marks in here and we know that's slow because we're going to make more money as it goes this way or more money as it goes that way. And that's all of those worst case scenarios. We have a wider range of worst case scenarios, but the total cost of our initial position is less. And so now we can just fill in the lines, just draw the lines out for the rest of it. We see this is the worst case over a pretty wide range here. As the stock starts going further down, we start making money as it goes further up, we start making money as well. And if it goes as high as a hundred, we'd make \$1,162 on the position. So let's look at these two. So the range on this to chart this straddle, we had to chart values from five 50 to two 50 for the same stock prices. For this strangle, we really is about two 50 ish up to about 180 or something.

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So this straddle is covering a wider range of possibilities, both a wider range of potential downside and a wider range of upside. Our worst case scenario for the straddle was down 550 bucks. The worst case for the strangle was something like 2 38. That doesn't necessarily mean that a strangle is always better, however, because when you look at your break even, we can see that the straddles breaking even around 77, whereas the strangle is breaking even closer to 75 below 76 somewhere. And same on the upside, that breakevens for the straddle are actually a little closer in. So you can actually, the chance of making any money is actually a little better on the straddle. And if the stock gets say up to 90, you've made some more money, you're out here at around two 50 or something like that, and here you're down closer to one 70 or 1 75. So the straddle is a higher cost position. The breakevens are closer in and there's higher potential profits. The strangle has a lower initial cost, it's a little harder to make money to reach or break even, and if you get to a profitable zone, you're still going to make a little bit less than you made with the straddle.

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Okay, so those were long straddles and strangles. What does the reverse look like? Okay, so for a long straddle or strangle, in order to become profitable, you need the stock to move substantially. We also know that they're going to benefit from increased implied volatility. Implied volatility is essentially how expensive the options are. If you own options and they get more expensive, then you can sell them back at a profit even if you don't wait for expiration.

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So short straddles and strangles are the opposite. What you're hoping for is the stock to not move very much. And for the implied volatility, if you want to exit early at a profit, then you can exit early with the profit. If the implied volatility decreases. If you hold this all the way to expiration, then the implied volatility doesn't matter because the future movement of the stock over the course of the next year has no bearing on the position if you have five minutes left to make your decision about whether to buy or sell the stock. So again, the implied volatility tells you how expensive, how much time value is in the

option, how much premium is in the option has no bearing on the intrinsic value. So because we want high volatility and high implied volatility on the strangles and straddles, you can call this being long vol or buying vol and the short straddles and strangles you can consider to be shortfall. Okay, so here is a picture, the p and I chart of being short a straddle.

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We see that our best case scenario now is that stock hasn't moved at all and we're going to make our maximum profit of \$550. We start losing some money as the stock goes way down or it goes way up. And if we're lucky, the stock might just zigzag back and forth. The stock can actually move quite a bit if it doesn't keep moving in the same direction. So if the stock bounces between 80 and 84, 80 and 84 and it's moving a substantial amount, three, \$4 every single day, but it doesn't go anywhere, it's just like a ping pong ball bouncing back and forth between these two values, that's fine for us because it's going to still land nicely in this high profitability zone for us. But even if they're small movements, if they go consistently in one direction or the other, then we're going to no longer be profitable. And the downside is essentially infinite. There is something if you want to trade a short straddle, there are ways to do it without infinite downside, and we're going to talk about that next in the fourth options class in this series. And you can actually buy some protection out here. You can change this position from straddle into something called a butterfly, and we'll talk about that next time.

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Here's what our short strangle looks like. You can see that your maximum profitability is over a wider range, but your maximum profit is much lower. It's at \$238. Now if it goes far enough, you'll start losing some money and there's still essentially unlimited downside and an unlimited downside. Either as this stock goes up or it goes down, it can cost you an unlimited amount of money essentially, but the chance of it costing you anything are lower because it has to move further before you're outside of your maximum profitability zone. Okay, so we're going to move on to our next type of position. So let's just talk through a scenario and let's imagine for a moment that you're expecting steady growth in a stock's price over the course of the next six months, somewhere between 10 and 20%, and you want to benefit from that increase in price. What are the strategies we can employ? What do we know about options so far? What does your own trading experience tell you about ways that we could do this? Well, the simplest thing to do would just simply be to buy some stock, right? So if we buy stock and we'll just stick with MNST as our example, it's at 82 today. So if it goes up 10%, it's going to be at 90 20. And if it goes up 20%, it's going to be at 98 40. So if we just buy the stock outright and we're not on margin then and our expected return is 10 to 20%, and that's pretty good,

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What else could we do? We could also just buy a call right now. Buying a call that expires out six months is going to be pretty expensive. It's going to have a lot of time value, a lot of time for the stock to move.

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And it's not always clear whether you want to buy the 50 delta or the 20 delta or the 30 delta, but in this case, we'll say we're going to buy an option that's a little bit out of the, because a little cheaper than buying the 50 delta call. And then how does that do? If we buy the 40 delta call and we're right about our assumption and stock lands between 90 20 and 98, 46 months out, what does that look like? So what does that cost us right now? So we look to our montage, we go out to the 16th of September, we look at the 90 strike and we say, okay, the bid is at 360, the ask is at three 90, so our midpoints going to be around 3 75. It's going to cost us \$3 and 75 cents to enter into this position. And how do we do if we end up in that kind of 90 to 98 range?

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So this says 10 to 30, this is actually 10 to 20%. So if we are buying the September call at three seventy five, where do we end up? So I've corrected that there. So the expected return, if the stock's at \$90 and 20 cents at expiration, how much is your 90 call worth? Well, you can buy stock for 20 cents less than it's trading now, so it has 20 cents of intrinsic value. At that point you spent \$3 and 75 cents, so it only has about 5% of the value left. So you've lost about 95% of the value, and that's scenario. But if it does go up substantially, if it goes up 20%, then all of a sudden this thing is worth \$8 and 40 cents. And if you take something that started at 3 75 and you go up to eight 40, that's more than a hundred percent return, 125% return. So our range in this scenario of this particular call is basically losing it up still to being up 125%. We could also do a call spread.

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So we're expecting the stock to be in a range of \$90 and 20 cents to \$98 and 40 cents, in which case this 100 call would have no intrinsic value at expiration. If it has no intrinsic value at expiration, then we've sold something that became worthless, and that's always a great thing to do. If you're trading options and you can sell options that are expired at zero, then you're doing something right. And so let's look and see how this would affect our p and I. If in addition to buying the September 90 call, we sold the September 100 call and made it a call spread.

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So here's our options montage. There's the 90 strike, there's the 100 strike. We can see that the midpoint for this 90 strike call is around three seventy five, stayed the same, and for the hundred strike it's looking around one ish, so we'll call it one 70. And so now the combined position, if we are buying the 90 call and selling the a hundred call in the September expiration, it's going to cost us around 2 0 5. The market says that the 90 call has a 36% chance of ending up in the money and that the 100 call has around a 20% chance a 20 delta of ending up in the money. So what's our expected return? Well, in this scenario, when this stock's at \$90 and 20 cents, the 100 call is going to be worthless. The 90 call is going to have 20 cents of intrinsic value, and so the position is going to be worth 20 cents. So this shows a negative 90% return, but we also spend a lot less at around 2 0 5 instead of 3 75. So even though it's a large percentage return, we've still spent a lot less money, \$205 per contract.

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How about if the stock goes up to the top of that 20% range at \$98 and 40 cents? Well, the 90 call is now worth \$8 and 40 cents, and that 100 call is still worth nothing. So since we brought the cost of the position down from 3 75 to 2.05, the return on the position that becomes worth \$8 and 40 cents is now a 310% return instead of 125% return. So clearly we've done something good. I mean, we've shifted the max profitability way up. We've decreased the cost of our position substantially. What else could we do? What are the other choices for us? Well, we can sell a put if stock's going to go up. When you're selling a put, what you're saying is someone can sell you the stock at a certain price. Well, if you're selling at the money put, you can collect \$5 and 90 cents about for doing that. And if the stock goes up, then no one's going to try to sell you a more expensive thing for less money. And so that's going to expire worthless. You're going to collect \$5 and 90 cents on that position. Now, how do we want to track the return on that?

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Well, probably your brokerage is going to have you say for your account, we need to keep about 20% of the value of the stock in reserve on the side in case the put moves down because selling a put and they want some protection that they could ask you to keep a hundred percent of the puts value depending on what type of brokerage you're using and what kind of options trading you do. But they also, a lot of places would say 20%. So let's just imagine that they're going to hold 20 cash reserve against that

position and they might force you out of the position if it starts moving against you. But 20% of 800 \$8,200 would be around \$1,640. So let's just imagine that it's kind of like you're putting \$1,640 up for this position. You are going to make 590 if everything goes your way. And so you've made a 36% return on this position. So that's great. So if you're right about your assumptions, you're definitely going to make money. SO'S a great thing to do. What else could we do?

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Well, all of these positions are just for a single expiration, but that's not the only way we could trade this. So our assumption is that this stock is going to go up steadily over time. If we thought it was going to jump up 10% overnight, then we wouldn't be most profitable to own an option six months out. We'd probably want to own the option that's two weeks out or a week out because that option could go up 500% in value, but we think it's going to slowly increase in value over time. So if that's the case,

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Could still own an option six months out, but potentially we're saying it's going to get in the range of 90 ish to 98 over the course of six months. But what's it going to do two, three months from now? Well, if it goes up steadily, it probably won't get too high in that amount of time. So another choice available to us is to sell a call, sell the 90 call that's going to expire earlier, that probably won't end up in the money, probably won't have value. And anytime we can sell options that we think won't have value by expiration, then we're doing something smart. Further, if we kept the 90 call, if we decided to sell the 90 call, say in June, and we owned the September 90 call in September, our brokerage is going to be pretty happy with us because they're going to say, Hey, look, you're giving someone the right to buy this stock at 90, but you have the right to buy the stock at 92. So it's not going to hurt you so much as long as you have that back month option, the long dated option in your pocket, the front month 90 call will never be worth more than the back month 90 call. They're both going to have the same amount of intrinsic value if stock goes above 90, but an option that's going to expire later will always have more premium, more time value. If you are

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Selling an asset when you already own a more valuable asset, that's going to make your brokerage feel good. So when you are selling different expirations, if you own the same strike and you own the longer dated one, they're going to treat that it's a very safe and they're not going to hold a bunch of margin. They're not going to start making you borrow money to protect it or anything like that. Okay, so what is that June 90 option trading for? Well, let's say you're selling it. You're probably going to sell it a little below the midpoint, and so we'll say 1 75, how much you'll be able to sell it for. So if we own the September 90 call for three seventy five and we sold the front month option for 1 75, then total cost would be about \$2 for the position. So we brought down the cost of our position quite a bit. So now we own this June, September 90 call spread. It's a time spread spread between June and September for the 90 call. What does our p and I look like over time? Well, if we're right in the June 90 call expires worthless, then we've brought the total cost of our position down to \$2,

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And at that point, the actual intrinsic value left will be just what the September 90 call is worth. It's going to be worth somewhere between 20 cents and \$8 and 40 cents, and that would give us a p and I in the range of losing most of the value, losing 90% of the value up to gaining 320% of the value. So that's a new kind of spread and it gives us a return that's a little bit similar, at least in this scenario to what the 9,100 call spread would be worth. But what if things unfold a little differently than we're expecting? So

we have an expectation that the stock's going to move between 10 and 20% over the next six months. What if it moves more than that? What if it moves 30% over the next six months? Then how do these two positions look all of a sudden if the June option still expired out of the money, if the stock hadn't gone above 90 by June,

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All of a sudden we own the September 90 call free and clear. We collected a dollar 75 for selling that June option, but now we just own the September 90 call naked. We just own it outright. That means that we now have the unlimited upside potential as stock goes higher and higher. And so if the stock goes up 30%, that would be to \$106. All of a sudden that option is worth \$16 and only cost us two to enter into the position. So we've made \$14 on our \$2 investments. That's a 700% return, whereas the September 9,100 call spread. Well, let's going to max out. The most that call spread can be worth at expiration is \$10 because that's the maximum difference in the intrinsic value is you can buy the stock at \$10 less and someone's going to build to buy it back from you \$10 higher than that. So that could be worth \$10 and it costs you \$2 and 5 cents to get into it. So the position could get up to close to \$8. That's still a great return, but you don't have the unlimited upside that you'd have if your front month option that you sold expires worthless, and then you own the fact month option, the long dated option outright. So that's the kind of rosy scenario where the time spread actually works a lot better than just a standard call spread.

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So now let's look at what happens if the stock jumps up in value, it goes up 30%, but it does it by the June expiration. Well, you're still long that 90 call in September, right? So this feels like a very positive move for you, but how does it actually affect our real p and I? So we're going to still have time left in these options. So we can't just say what the option is worth based solely on the intrinsic value. So we actually need an options calculator to tell us. So we're going to keep our volatility assumption around 31. So we're going to say there's not a change in vol, but we're going to say, okay, what happens if stock's worth \$106 by June? And so we have to look at the individual options on their own. We can't say, we can't just look at the intrinsic value. So the September 90 call in this scenario is worth \$18 and the September 100 call, you still have 90 days left. Only June is worth \$10 and 54 cents.

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So it's interesting that difference is \$7 and 50 cents, even though they're both well into the money, you'd feel like maybe there should be a \$10 difference in the value of these things. But what do we know about in the money options versus options that are closer to at the money? The options that are closer to at the money are going to be the ones that are the most sensitive to move in the soc. They're going to have the most time value, the most premium, essentially the most option ability. What makes an option? An option is the strongest. When the option is at the money, there's the widest range of possibilities that could possibly occur. So at the money is going to have more premium, more time value than an in the money option will. But when stock moved from 82 away up to 106, all of a sudden the 100 call is the option that's much closer to that. The money is going to have more premium and more time value in it. And so even if you held this position all the way to expiration, that would be worth \$10. Right now it's not because that September 100 call has more time value in it. So that call spread would be worth seven 50, which is great. It's gone out from 2 0 5 to seven 50, and if you wait and stock doesn't drop down below 100, it's going to end up being worth \$10 90 days from now. So you're going to be making, you'll make \$250 per contract in the next 90 days with that call spread.

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So it's kind of a refresher on some of the call spread topics that we talked about previously. So how does the time spread do? Okay, well, the September 90 call, as we've talked about, is worth \$18 and 4 cents. How much is the June 90 call worth at expiration? Well, that options at expiration, so we know exactly what it's worth. It's worth the intrinsic value and how much intrinsic value is in the 90 call. If stock's trading at \$106, well, you can buy stock at \$16 less than the market price. So you could buy stock at 90 and immediately turn around and sell it for 106 and make \$16 per share. And so the June 90 call is worth \$16. So our position total is worth \$2 and 4 cents. But what did we pay for it?

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Paid \$2 for it. So we are long. All these call options and the stock goes up 30% we feel like we haven't made, and our position stays flat. And by the time you end up paying a little bit ask spread and some commissions, you might actually lose money even though stock moved 30%, a huge move in your direction, but it did it too fast. The amount of premium left in your September 90 call decreased a lot, and the amount of intrinsic value in the one you sold went from zero to \$16. So if you are long a time spread, whether it's long calls or long put time spread, you can do the same thing with puts. You want the stock to move in your direction, but you don't want it to move too fast. Or you can actually manage to have a losing position by the time you exit out of it, or at least have no profits in it if it moves too fast in that direction. Okay, so if you went through this scenario and you said, okay, I didn't like that. I felt like I was going to have a big winner and I barely broke even.

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I sold an option that's too far out. I sold that June 90 call. I shouldn't have sold an option that had so much time to end up in the money. I should have just sold an option maybe 30 days out, because even though the stock moved up 30%, it didn't do it that fast. And I still would've not lost money had I sold an option 30 days out, and that's very valid. So if you sold an option 30 days out, maybe it didn't get up to 90, 30 days out and that option, you're going to collect \$2 or a dollar for it instead of nearly twice that or more, but that's still a nice way to collect some money. You've collected an extra \$105 on your position and maybe that option won't become in the money even in a good scenario of the stock moving in your direction. But what happens if you are successful, that front month option, that 90 strike, let's say stock ends up at 84 86, that's going to expire worthless, but you still own the September 90 call and what stops you from just doing it again because you still have that insurance program, you essentially sold an option to someone else that expired worthless. You know that you can't ever be hurt too much because you own the back month option.

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You're not going to lose more than the difference in the two values of the options, but once that option expires, then you can just do it again. You have the same insurance policy in the back month and if you're successful then potentially you could do this five or six times in a row before your September options come up. If you do this just right, even if the stock doesn't move, you could potentially collect \$6 and 30 cents between now and September even with the stock saying flat and that back month option costs you \$3 and 75 cents. So in that scenario, if you do this just right,

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You might be able to turn a profit on this calendar spread this time spread just from rolling that front month option. You sell it over and over and over. What did we learn about the front month option? The front month options value decays a lot faster than the back month's value option. So you are constantly selling a front month option, which is going to go to zero value within 30 days, but your back month

option is not going to go to zero value. It's going to go down just a little bit even if stock doesn't move. So you're selling something that fizzles out, fizzles out in the pan and if you do it just right, you could potentially do that over and over and over and derive a really nice profit from this position even if stock doesn't move.

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So all of a sudden if you just break even on your 90 call, you can still make a ton of money and end up at \$10 per share if you just break even if stock gets up to \$90 and \$93 and 75 cents, and even if it just goes sideways and you do this over and over, you can still make the difference between six 30 and 3 75 is at around two 50 a little more even a stock doesn't move and that'd be like a 70% return even if it didn't move. So let's look at it. So you get six 30 from the short call you, the stock ends up at \$90 and 20 cents, you make 20 cents there. So you make six 50 in that scenario and if it goes all the way up to 98 40, then your position is now worth all the way up to 1470.

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So now all of a sudden your potential range of profitability is if you're right about this assumption and you're able to sell that front month option over and over and over and they all expire worthless, which is a very rosy scenario and potentially your profitable range here would be you'd be guaranteed to meet somewhere between 200 and 400% on this position. That's going to be hard to do in the real world to sell something that's a little bit out of the money and have it expire worthless over and over and over is unlikely. What did that front month option, what was the delta on that front month option that we sold? It was around 20.

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That means that the market thinks there's about a 20% chance that it's going to end up in the money, and so if you do this five or six times, you should expect that one of 'em is going to be a loser. Could be zero, it could be one, it could be two. You could get really unlucky and it could be more than that. So batting a thousand thesis is unlikely unless you're selling an option that has a five delta. If you're selling the 120 strike call on the front month, then yeah, the chance of that ending up in the money is almost none, but you're going to collect pennies if you're selling options that are worth so little as the traders I used to work with called it, they called that picking up nickels off of the train track. In this case you'd have some insurance at least, so you wouldn't be selling it naked.

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Okay, so let's look at a rolling time spread. Let's look at something where you own the back month option six months out and you are selling the front month option about every 30 days. So let's look at that as a real example. Okay, so I just dug around until I found a stock that moved fairly steadily up over the course of around 180 days, around six months, and the ETFs are always going to be less volatile than the individual components, and so I just chose SPY for this example and I chose a roughly six month time range where it moved up 18%. So if we did this strategy, if we sold a 30 day 20 delta option, meaning out of the money option, call it the same, approximately the same strike as the pack a month option that we owned, what would we expect? Do you think you are going to a hundred percent of the time be successful with that or how's it going to look? So let's dive in. So I'm going to create a custom strategy. So at the bottom of the strategies list there's something called custom. I'm going to click the add button. I'm going to enter a name. I'm not having any shares of stock in this scenario.

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I'm going to add two different options down here. First I'm going to add along, so I'm going to say direction long call. I'm going to say 30 delta and I'm saying 180 days to expiration and the number of contracts is going to be one. So I add that and then I repeat, but this time I go short call with 20 delta.

That was the 90 strike that we looked at was about 20 delta when it was a month out, I'm going to say 30 days expiration. Then importantly, I'm going to uncheck the close all legs with front month.

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The reason is if this was checked, then as soon as this 30 day option expired, it would close the entire position and then it would reopen the entire position. When it reopened the entire position, it's going to say I want to buy options 180 days out from May. So instead of looking at September options, it's going to be looking for October options. Now there might not be October options, so you might end up with the same position the first month, but after two or three or four months, all of a sudden you're going to be buying January options for the back month and that's not what we're talking about right now. We want to own the back month the entire time and we want to just roll the front month over and over and over, and so where it says close all legs of the front month, we're going to uncheck it. So then we let the simulator tell us what happens

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We have a great return. So stock moved up 18% and we made a 362% return. So that's fantastic. That's the kind of returns that you hope for. As an options trader, generally you place smaller bets and you're going to lose plenty of those bets, but sometimes you're going to be successful and you're going to make not 10 or 20 or 18% return, but you might make 200 or 300 or 400% return as you spread those returns out over time. So in this scenario we got a 362% return, but did we win a hundred percent? No. Right here when we're opening the position, we're buying the 180 day call with a 30 ish delta and we are selling a 30 day option with a 20 delta. That's a pretty big run up right there. The stock, the SPY is going from 245, maybe up to two 70 within 30 days. So that 20 delta option might've actually ended up in the money, so that might be one of our losers right there.

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Now what we say is the red arrow indicates that we've closed part of the position, so we close that front month option and then we close it by buying it and then we sell another 30 day option. Well, this looks better. We sold a 20 delta option and this is a pretty gradual time period here, and so that's probably a winner for us when we close the position and we can always click the tile and go and see all of the details. And then this is another time where it's like a relatively calm, nice upward movement. Maybe one of these ends up slightly in the money, but we still do well over in the position

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When we here, we're selling the 30 day option and that's going straight down. So that's a great scenario for us because we still own the back month option, but then here when we roll it and sell it again, it is a huge runup and so we're almost certainly going to lose on that. So we see that on some of the legs that we sold, we lost money on them, but overall we did great in our position and that's pretty typical of a rolling time zone. If you're selling an option that has some real value in it, you're going to lose some of them, but that's totally okay, especially if things are moving in the right direction and your back month option.

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So that was a call time spread, but that time spread calendars are the same. It's just that you want things to move down and if you're selling the front month put, then you don't want them to move down too fast. Everything else is relatively similar. You want things to be calm, relatively calm in the short term and after your front month option expires, you want it to move a long ways in your direction. So

everything that we just talked about is still true with the put time spreads, including that if there's an increase in implied volatility, your position's going to go up in value because that back month option's going to benefit more than the front month option, so you're still long ball. We are just going to talk very briefly about a short time spread. So if you are short a time spread, it means that you're selling the back month option without protection. So it means you might be short a long dated put or you're short a long dated call. What makes it a time spread is that you're also buying a near term option. If it's not a quote diagonal time spread, it means you bought the same strike. We'll talk about diagonal time spreads in the next class, but if you're buying the same strike, you're not hoping to make money off of that option you're buying, you're just getting some protection from your long dated option that you sold.

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So the position is going to look a lot like just selling naked, the back month options with a little bit of protection, and so if you're selling a long dated put short, you're saying someone can sell you the stock at that price, and so essentially you're going to want to be prepared to own the stock, and if you're selling a long dated call, then if you happen to own the stock already, then you're saying I'm okay to exit at that price. If you don't own the stock, you're saying I'm willing to be short the stock, but for this class, that's as much as we're going to say about those two things. In the next class, we're going to start getting into some multi-leg trades and some diagonal time spreads, and we're also going to look at, okay, if you own that straddle and it's whipping up and down, is there a way to make money from owning stock

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From kind of hedging or adjusting your delta position? As time goes, and there's some pretty interesting strategies around that. I'm going to do a quick summary and then if there's any questions, I'll take them and if not, then that'll be the end of this class. I'll look forward to seeing you on the next one. Okay, so when you're long a straddle, you're looking for the stock to move up or down and you want it to move not just whipsaw back and forth, but you want it to move continuously in one direction. Initially, you don't care if it goes up or down, but after it starts moving a little bit up or a little bit down, you want it to continue moving in that direction. You want some real movement of the stock and also if the market thinks there's going to be movement, if there's expected movement and the implied volatility goes up, that helps your position as well.

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With a short straddle, you're hoping for calm. If the stock does move, you want it to bounce back and forth without moving a long ways in any direction, and if the market gets assumptions about implied volatility about the stock volatility decrease, then potentially you can exit the position early and take a profit. Additionally, if not too much happens, you can probably take a profit in the near term because every day that position's going up in value, that stock doesn't move because you have sold options that are going down in value every day so you can buy them back if nothing much happens at a profit when you are along a strangle, it's a lot like being long a straddle except stock has to move more in order for you to make some money. The initial cost is lower than if you bought a straddle. If the volatility assumptions in the market increase, that still helps you and your breakevens will be a little bit further away and so will your chances of turning a profit.

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If you're short a straddle, you want calm and you want people to expect calm in the market, but you do have a range where the stock can move and still be at your maximum affordability. For that reason, your chances of having some amount of profit are also higher, but the best case scenario isn't as good as the best case scenario if you sell the straddle because what you're selling isn't as expensive with a long time

spread. If you're long the call time spread, then it's still long-term abolish position, but you want the stock to move in your direction after the front month option expires. If you're rolling that front month option a lot, then you're okay with relatively flat movement. Stock doesn't really need to move in your direction. You don't want it to move a long ways against you, but if stock kind of goes sideways, you could potentially sell that front month option over and over and over, and its time value is going to plummet each month it's going to go to a zero, but that back month option is only going to slowly decrease in value, and so you can actually turn a nice profit that way.

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If things go right, an increase in volatility assumptions will still increase the value because that longer dated option is going to have more time value in it.

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If you're short a call time spread, then as we talked, you're selling a long dated call when you're selling a long dated call. If that doesn't work out in your favor long term, you're saying, I'm willing to be short the stock. If you're selling a long dated put, you're saying I'm willing to buy the stock. So the short call time spread is neutral to bearish, and the short put time spread is neutral to bullish because if the stock goes up, then you are not going to have to buy the stock at a lower price. In that scenario, the increase in implied volatility will have a negative impact on your position because what you're short, if you want to exit out of that position, then the option that you're short is going to be more expensive and you're going to be forced to be in it. So near term you're going to show a negative p and I. If you hold it to the end, then the real p and I will just be the intrinsic value.

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Okay, so in the next class we're going to talk a little about gamma, a little bit about theta. We're going to talk about using stock to balance out the delta in your position, and we're going to talk about some of the cool strategies that Ofir has built and tested that are in the today tab and in trade machine that use some diagonals. They're powerful strategies from managing the time loss for you managing your theta, and we're going to get into that next time around. Thanks very much for attending today. Okay, I do see one question from John and John says, how would you think about owning a long call time spread versus selling the short put time spread? Yeah, so ultimately its a decision about buying options versus selling options. They both directionally want the same thing when you're long that call time spread. If I'm buying long dated options, then when I'm looking at the market, I'm saying that I think the back month options are relatively cheap.

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I still want to finance that six month out call or my long dated call by selling an option front month. And I also, I don't have an immediate opinion. I don't feel like the stock's going to skyrocket overnight. I think it, it's going to slowly move in that direction over time, but I think that there's substantial upside potential in the long run. I don't think that the stock's just going to be neutral or just go a teeny bit up because that'll be a hard way to make money if I'm just entering into the calendar as my one trade and not trying to roll it. So if I'm buying the call time spread, I'm saying I think the volatility looks affordable. I think that the stock's going to move more than the amount that the market says it's going to be worth, and I'm going to buy that backdated option because I think there's real long-term big potential to the upside.

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If I am going to sell puts or sell a put time spread, then what I'm saying is in my mind, the way I think about it's I'm willing to own this stock I'm selling puts short. I feel like it's a perfectly reasonable stock to own. I don't think there's much downside risk. I think that this stock is trading pretty close to some kind

of multiple of book value that I'm comfortable with. I just think that their customer base is solid. I feel like the revenues are solid. I don't feel like the stock has much further to go. Additionally, it could have been a volatile time if I'm trying to sell options and then I want to sell options when options are expensive and when we've gotten through the worst of the volatility. So the best time to sell puts is after the market plummets, where the volatility is sky high, where the options are extremely expensive, but where there's actually not any more downward movement.

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So if you look at the Covid crash whenever it was in April, all the options are still really expensive. If you chose right then to sell puts, that'd be great. The market's going to go up and those puts are going to expire worthless, but they're going to be expensive puts. So if I'm selling long-dated options, I'm saying to the market, look, I think the market thinks that there's more volatility and more risk than I do. What I'm selling a put in I feel like is a solid thing to invest in. And if I'm doing that as a time spread, then maybe I'm saying I could be wrong. This thing could go down more right away. So as the market's crashing, maybe I'm like, I'm not sure I've timed the bottom perfectly and I don't want to take the risk on this thing going down another 30%, so I'm going to go ahead and buy a little protection 30 days out because I'm trying to hit the bottom.

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I'm trying to sell this, put spread it, and I'm trying to time the bottom of the market, but I don't feel that confident. I don't know if it's going to bottom now or it's going to bottom in a month, so I'm going to go ahead and buy a little protection. I'm going to buy the front month call. Sorry, I'm going to buy the front month put to have some downside protection, but I'm going to sell that back month put because I think long-term, we're going to be way over this in the long term. That's some thoughts. There are lots of different ways to look at this. Okay, everyone, thank you so much for joining today. We're going to talk about some really great topics next time around. It will be in three weeks on a Thursday at the same time. Thanks for being a member. Thanks for being part of our community and for being part of Trade Machine, and I'll look forward to seeing you all in three weeks. Thanks very much. We will be getting some free money.

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So we see if we're going to buy the 90 call, it's going to still cost us 3 75 and if we're buying the 100 call, or rather we're selling the 100 call that's going to cost around one 70 or collect around one 70. So the cost of our overall position has gone down to \$2 and 5 cents instead of \$3 and 75 cents. That seems like a good thing because as far as we know in our assumptions, the stock's never going to get above a hundred. We've collected an extra \$170 per contract and we've given up nothing for it if we're right.

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So let's look at that. How much is that worth to us? So at expiration, how much is the September 9,100 call spread worth? It started at \$2 and 5 cents. Well, the 90 call will be worth 20 cents at that point because you'll have the right to buy stock 20 cents below the current value. And as we thought, the 100 call will have no value even if the stock goes all the way up to \$98. So that's going to have no value in any scenario. And if stock goes up that high, then the 90 calls is going to be worth \$8 and 40 cents. So the potential value in the position is still 20 cents to \$8 and 40 cents like our call. But the difference is that the position cost us \$2 and 5 cents instead of \$3 and 75 cents. And so as a percentage, we're going to still lose most of the value if the stock only hits 90 20, but half as much.