

Ophir Gottlieb ([00:00:01](#)):

Hello. Hopefully you can see me. I shall stop sharing the screen. Hello, Jason.

Jason Hitchings ([00:00:22](#)):

Hello.

Ophir Gottlieb ([00:00:24](#)):

Welcome everyone. To what will be a wonderful day of options education? I must tell you three things before Jason can tell you many more than three things. First. This is part one of an education series, so this will be for beginners. Our education series will play out about every two weeks in four parts with webinars like the one we are on today, and the next one will be on Thursday, March 17th. In one week we will have a how to use trade machine webinar, which will dive into the guts of the platform. I shall lead that webinar. You will get an email. It will be in one week from

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Today. And finally this will be a rather formal presentation and then open q and a for a little bit. Jason Hitchings will be the presenter today and I will be in the background perhaps trolling him in real time. So who is Jason is a good question. It's a question I think about many times. Jason is our chief technology officer. He is the architect and developer of trade machine. That means every single line of code is his. He started in financial technology in the options world about 16 years ago for anybody that cares, 16 is one of my favorite numbers. He worked with option pricing models to push high speed and accurate option computations at about 200,000 per second into software that is now owned by SIBO and is resting on hundreds of market maker terminals right now. His option trading training, option trading training was from option makers, option market makers, and in fact, one of his mentors was a senior option market maker that I used to make markets with on NYC arca and that guy actually shaped bits and pieces of my trading style, not necessarily a valuable piece of information. One. You now know Jason is one of the most talented computational finance mathematicians I know, and it is our great privilege to have him as our CTO today. However, he's not acting as CTO, he's acting as the host and presenter for you. Without further ado, Mr. Jason Hitchings, you may go.

Jason Hitchings ([00:02:59](#)):

Great, thanks Sophia. Thanks for the introduction. Let's see here. I'll share my screen. Thanks everyone for being here. So as Sophia mentions today is going to be about the fundamentals of options. The expectation is that you have some trading experience and in the stock world and sort of limited trading experience in the options world or just want to refresher. So before I get into that, let me just go through the legal disclaimers. 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.

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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. 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 and trading can be substantial carefully considered the inherent risks of such investments in light of your financial condition.

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Okay, so this is our agenda for today. Broad strokes, we're going to start off with a metaphor instead of a bunch of option definitions and we'll pick up on that metaphor in future classes and we'll kind of keep enriching it and making it more useful to understanding options trading. Then we're going to get into understanding some of the kind of core aspects of trading options, the effect of time, the effect of buying and option at various strike prices. We'll go into a few trading plans about when you'd want to buy a call, when that makes sense. We'll look at selling calls and then we'll move on to puts and then we'll have a q and a at the end.

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So again, the expectation is that you have had limited options, experience or that you just really want to a refresher or that you just like to consume everything. Trade machine puts out. If you feel super comfortable with options montages, you understand the effective time on the price of options, all that kind of stuff, then this will be just a pure refresher for you guys. Okay, so let's start with the thought experiment. And our thought experiment is going to be about if we're going to buy a safe, and so here's the scenario, there's a restaurant. The restaurant always makes between 500 and a thousand dollars a day. Some new owners come in and they just want to sell off a bunch of things at the restaurant and they're just going to sell the contents of the safe because they don't really care that much about what's in it.

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You're going to get the contents not the safe. They're going to give you a key, it's going to have between 500 and a thousand dollars and that you can trust everyone involved. They're not going to rip you off. So feel free if you want to, I'll keep an eye on the chat. So as I pose questions and I'll answer them as we go, if I see people responding to questions as we go, I might choose to chime in with one of those. So the question is what's the safe worth? There's somewhere between 500 and a thousand dollars in it, but what's it worth? So one question becomes, well what's a normal day for the restaurant? Because a normal day could look a little different. There's between 500 and a thousand, but that might look like \$600 with some days closer to 500 some days closer to 700 and rarely having days out here. Or it could be the opposite. You could have a ton of days where there're collecting around \$900 and very few days on the low end. For right now, let's just assume that there's a nice clean, what you'd call a distribution of how much money is in the safe and that it's centered around 750.

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So now with this information, what would someone pay? So you can say a few things. You're expecting there to be about \$750 in the safe. There's not more than a thousand and there's more than 500. So if you can get the safe for less than 750 bucks, you're expecting on average to make some kind of profit. If somehow you can buy the safe for 500 or less, you're guaranteed to lock in a profit. And likewise, if you're buying the safe for a thousand dollars or more, you're making a terrible decision. So in the options world, you spend a lot of time looking at what they call p and l, profit and loss charts. And so I just wanted to use this safe to give you an introduction into those since we'll be using p and l charts a lot in this video and going forward. So the numbers on the bottom are theoretical amounts inside the safe where we don't know, but we're going to map out different theoretical possibilities

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And this line is the breakeven point and making money. Anything above it, you're making more money, anything below it, you're losing more money. So for the purposes of this little thought experiment, let's just say that you could buy the safe for 600 bucks. The question is how much do you make depending on how much is in the safe. Okay, well what's the best case scenario? The best case scenario is that there's a thousand dollars in the safe. It costs you 600, you make 400 bucks. What's the worst case? Well, we

said it's around 500 bucks. And so in that case you're out a hundred dollars. Let's just fill in another price here. So this ends up being your break even. There's \$600 in the safe, you paid \$600, all very straightforward, but this will be useful later on. And if there's some random amount of money in the safe, like \$857, then you've made \$257. So this is a really basic profit and loss chart. It goes up into the right and you can map a line onto this that tells you essentially a function or a formula for how much you're going to make over time.

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So let's take this, make it a little more interesting and let's say that you could only have the money above \$900. Now what's it worth? Well, that's a pretty challenging question to answer because we know it's going to be centered around seven 50. We know a theoretical best case and worst case, but how do we know how often there's more than \$900 in the safe? It could look like this. Everything's still true. It's still more than 500, less than a thousand still centered around seven 50 if this is how the days are spread out in terms of the likelihood of having certain amounts in the safe or it could be much more variable. The restaurant could just have a single client where they cater a lunch for a big business and they could make exactly \$750 every day and having the right for all the money in the safe above \$900 could be completely worthless or it could be something very different where a decent amount of the days there is more than \$900 in the safe and it has real value.

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So clearly if you're looking at these two shapes of charts, you'd want the one that has this bigger spread and what would you call that? In statistics, you might call it the variance. And just in everyday terms you might call it the variability or even the volatility of what's inside of this. So you'd say this is kind of a low variability and this is a high variability or high volatility. So when you have the right to buy something and there's no downside in owning, right, then volatility is actually positive things in terms of figuring out the value of that.

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If you're managing a big fund and you're trying to invest in the market, oftentimes the performance of the fund is actually ranked against how little volatility there is. If you're buying a stock and the stock is going to go up \$2,000 over the course of the year and you spent \$10,000, you don't want the stock to be fluctuating between zero and \$20,000 throughout the entire year just to make \$2,000. That would be a very stressful year. But in this world, when you are having the right to buy an asset, that volatility is actually worth a lot. It creates a range of options and a range of possibilities, and you have the possibility of capturing the best case scenarios within that.

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Okay, so let's relate this a little bit more to options. And so just kind of a vocabulary quiz for some of the equity option terms. Let's just look at this and map these terms to the options world. So the money in the safe is the what on the right hand side it, the delta or the exercise or the expiration or and the right to buy without the obligation. So the money in the safe is the what you call in the options world, the underlying asset. It'd be kind of like the stock that you're buying and the right to buy without the obligation would be a call option and the price above which you can take the money. 900 in our example would be the strike price.

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And if the safe is opened and it's found to have \$840 in it, your option to have the value above 900 would be considered to be, and the term is out of the money for that. So this is just kind of the way that we're using this metaphor, but there's something missing, really important piece to this puzzle that we're missing. There's a lot of subtleties that you're missing. We're not talking about interest rates or

other things like that, but a really big factor that we haven't put into this so far is time. In our scenario we're just have one day to buy to get the contents inside the safe. In the options world, typically you're having the right to buy or sell something in the future, and that's a really important component of the value of the option. So just for this analogy, let's say you could just sort of see what's inside the safe and every single day for a week you could choose whether or not to use your one-time, right, to get the contents of that safe. Or if you could do that anytime for a month or anytime for a year, obviously the longer you have to make that decision, the more chances you're going to have to get the value that's closer to the maximum. And so the longer you have, the more valuable that becomes.

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In the options world, you refer to that as the time to expiration. It's the time until your right expires. So if you wanted to dive into just the pure definition of call, this is it. It's pretty dry, but call options give you the right to buy without the obligation an underlying asset. We're going to be talking about the stock today at a specified price within a specified period of time. It's called a call because you can call the asset away from someone and whatever you're able to call away, it's called the underlying. In our world it's a stock or an ETF. So a call option is giving you the right to buy a stock and each different price that you can buy at, whether it's buying at 10 or a hundred, those are called the strike prices and each call lasts some certain amount of time, and that's the expiration date or the duration or the maturity. So just looking at a simple example, this would be it says April 14th, 2020 2, 1 70 Apple call, and that would give you the right to buy Apple at one 70 anytime between now and April 14th. There are other styles of options, but these are the American style of options and you can use it at any time. So I'm just pulling up a montage here, an options chain from Thinkorswim

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And just understanding how to read this, the call options are on the left, the put options are on the right. We'll talk about those later. These are the expirations. So this is the time you have to buy this thing. These are the strike prices. So this is the price that you're buying or selling at. And then I'm going to zoom in a little bit. And so right now I'm just looking at one month's expiration and we see this is for the 14th of April.

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This call option would give you the right to buy apple at 1 45. This one would give you the right to buy apple at 1 50, 1 55, et cetera. So the example that we gave was the one 70, and that's this line here is the last trade price. That's how much the option changed on the day. This is the price at which the market will buy it, which is the price that you would sell it for. And this is the price that the market is asking, which is how much you would pay if you were looking to buy it.

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So in this case it says if you were buying this, it would be \$3 and 90 cents a share. But it's important to keep track of the fact that this is always almost always for 100 shares, aside from some special situations if there's a merger or something like that, options give you the right to buy or sell a hundred shares, but they price it per share of stock. And so if it says three \$93 and 90 cents, it means \$390 plus any commissions. It's a little bit of a convention to get used to, but it's actually quite useful to price things on a per share basis. And we'll kind of get into why that is later. But I just wanted to just for people that are really brand new, just kind of walk you through what that looks like. Okay, so we didn't talk about time and that's safe, but let's just dive into some examples and try to understand why time has such a big impact and how that relates to how much the stock itself moves. So we are going to invent a fictional company. We're going to call it Safeco, SFCO. That ticker isn't listed as far as I know. If it is, it's just a coincidence if it's listed in some Canadian exchange.

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But in this scenario you have the right to buy a hundred shares and you can buy at \$9. How would you decide what that is worth to you stocks at seven 50, you have the right to buy it at \$9.

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So in the options world, what would you call these things? The underlying value, current underlying value, that's the stock price and the strike price is that's the price that you are have the right to buy it at. So at this point, can you say what this is worth? Not really. If you are going to buy the stock today at \$9 doesn't have any current value because you can buy it in the market at seven 50. So we need more pieces of information. And so in terms of what it's worth now, nothing buying a soda at \$5 if you can buy the soda in a machine at a dollar doesn't have value.

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Let's go back to this kind of theoretical chart and talk about what's this option to be worth at different values of the stock. Now this isn't strictly a p and I chart because we're not talking about what the option cost us yet. So we're just looking at what the value in the option is at various scenarios in the future. So if on expiration day the stock is that \$5, that doesn't have any value to your nine call because being able to buy something at \$9 that you can get for \$5 has no value. So that's true of 6, 7, 8, and nine because again, if I am just offering you the right to buy something, you can just buy on your own that also doesn't have any value. But once stock is up at \$10, now all of a sudden I'm saying I can get you something for nine that it would cost you 10 to get elsewhere. Not only that, I can buy it for nine and I can sell it for 10 in the market and so I can make a dollar per share if the stock goes up to \$10 and I'm doing that for a hundred shares. So now the value of that option is a hundred dollars and for every dollar that it goes up, I'm getting an extra a hundred dollars of value out of my options contract. If the stock ends up at 50 somehow, then you have \$4,100 of value tied up in it.

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Okay, so now we've seen what some different valuations look like, but one question is how long does the stock have to get there? So it might have 10 days or 30 days or 82 days if you knew that, if you knew that you had to 30 days, would you know how much this option is worth? There's still a lot you don't know. So a really central question is, well, how much does the stock actually move? So in this scenario on the left, we're seeing the stock kind of staying in a pretty tight range between six and eight in this other one, it's whipping around all over the place. Now if you have the right to buy the stock at nine, it looks a lot more attractive for the stock on the right.

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And so in the stock world, what do we call that? The main term used to describe that as volatility. So there's a connection between how much the stock is moving and how long you have to make a choice. And we'll get into some of the more technical aspects of this more in future classes. Well, let's just look at a few charts in a few timelines. So with this chart, if you're just going off your gut and trying to figure out what this option, this nine call is worth, and the stock's here at seven 50, if you have a day or if you have four months, your instincts just tell you obviously the chance of it ending up above here is a lot better with more time. But look what happens when we just make the stockless volatile. All of a sudden the right to buy this option or buy the stock above nine, even four months out is seeming quite unlikely. Here's another scenario where it's really volatile, where you could imagine really anytime it's starting to come above that nine level where you start to see some value in it, even in the short term. And I just doubled all the numbers on the left here, so now it's at 20 or 15 or 10. So the chance of this thing hitting nine soon, even within the next week or so, seems pretty reasonable.

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So when you look at a chart like this compared to a chart like this, you can start to see that the amount that the stock is moving and how long it has to move that there's a pretty important connection between the two things. And this is presented largely to help us develop instincts around a stock's volatility and how that affects the value of an option and how that's related to time. And then we'll get into more technical aspects of that as we go.

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So now we have a lot more information. We say, okay, the current underlying price is seven 50, we have the right to buy it at nine. We'll just put a number on the volatility. We'll say on average the stock moves 51% per year and we'll say that we have 27 days to make our decision. So now at least we could come up with a gut estimate for what we think this thing might be worth. But it turns out once you have this much information, you can do better than your gut. You can actually turn to some math, some option models and statistics that will help you just determine what are the actual chances of this happening according to the math. If we plug in these assumptions, let's do that. Here's just a random options calculator online. It's no better or worse than others. I've hidden some of the complexities. I did plug in an interest rate assumption here. When you plug those assumptions in, what the options calculator is telling us is that this option is worth 5 cents per share. Okay, so 5 cents, but it's 5 cents times a hundred because it controls a hundred shares. So they're saying that this option that we just talked about has \$5 of value in it in terms of what the option models think is a fair price for this thing.

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Okay, so 27 days, it's about a month. So you're saying the calculations, the statistics are saying that this theoretical stock that if you spent \$5 on the chance of this stock going above \$9 and capturing all the value above \$9 between now and a month from now, but that would be a breakeven investment at \$5 is about what this is worth. So now as we're trying to understand the effective time on the value of an option, let's ask ourselves the question, what is this option worth four months from now? The intuitive answer might be, well, it's four times as far away, so it's worth four times as much, which would be \$20. When we plug it into an options calculator though the options calculator says it's worth 36 cents per share. So that's like seven and a half times the value at four times the time. So that's curious. What if you do it in the opposite direction? What if you say, okay, it was 5 cents a share when it was 27 days out. So what if it's four days out? Is it about 1.25 cents roughly, something like that, a little more than one, maybe one and a third cents

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Per share. And when you plug that in, this is an old picture, but it actually comes out to 9 cents per share, which is only about a sixth of the value. When you map this out over time, all these different durations, this is the way the prices change. So when you look at this chart, it feels fairly intuitive. It's going down over time and eventually it's going to reach zero again, having the right to buy the option at \$9 if SFCO is trading at seven 50 doesn't have value. So you know what? This thing is going to zero, but there's something subtle going on that I want to bring your attention to, which people that have traded options in the past have experienced firsthand. If instead of looking at this chart in terms of total dollars, you start to look at it in terms of percentages, the picture looks very different. You see that as a percentage. So this is the amount of time remaining to the right and this is the amount of the percent value retained, and you can see that this thing is plummeting. So we're looking at these 10 day increments for how much is left in it, and in the first 10 days the thing goes down about 9% in value. But from day 20 to day 10, look at this, it goes from being worth \$2 and 80 cents to 40 cents in terms of the total option value. So this thing has just, it's gone down 86% in value in that last 10 days.

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So it's a really important thing to understand about the nature of options and the nature of the math involved in options is that this value that you're looking at, that option that you're owning, it's not if the stock's not moving, you're not going to see a lot of change at first, but it's going to plummet towards zero and it's going to catch up to you quickly. So when you own the right to buy a stock for more than the current stock value, this thing's going to move towards zero very rapidly. Time is not your friend. And so it's something to be very conscious of as you own options. Anytime you own option, your option's going down in value every day that passes, but those out of the money options will really plummet. We'll look at some in the money options later on. There are ways to manage this risk with spreads and other things, and we're going to talk about those in upcoming classes. But here's a question for you. If you buying a long call in this kind of scenario and it goes to zero, does that mean that the trade itself was a bad trade, a bad idea to start with?

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So let's look at it in terms of rolling a dice. If you're going to roll a dice and it costs you \$5 to roll it, and if it lands on a six, you get paid out \$50, that's a pretty good bet, you get a 10 x return and you're going to win one in six times. So that's a good bet. Now, if you roll the dice and came up with a two, did you make a bad decision to roll? And this is pretty important concept in trading, especially in trading options. If you're trading an out of the money option, it's going to plummet towards zero, but it could have been a reasonable risk reward anyway. But an important takeaway is if the way that you decide it to roll this dice is you put everything in your bank account and you mortgage your house and put it all in one role, then yeah, that's a bad decision. But if you have a way to spread out that risk and take that role 10 times a hundred times, this is going to work in your favor over time. So it can still be a great decision as long as you are managing the size of the actual positions and the bets that you take.

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You want to be taking bets where you have some edge, and that edge only plays out over time. Okay, so let's start talking about not just what the options value is, but let's start talking about the profit and loss. In this scenario, if you're buying an option, if you're buying a call, can you lose more than you put in? Basically no. If you're long a call or we'll talk about puts later and all you're doing is buying the option, you can easily lose a hundred percent of the options value, but that's the limit of your losses. And so that'll be your worst case scenario and we'll talk about when that occurs. So if we're going back to this example where you're buying this nine strike call and you are spending 40 cents a share of \$40, how much do you make or lose if the stock stays at seven 50? It has no value at seven 50 to buy it at nine, so you lose a hundred percent. And what if the stock goes to zero? Well, it has no value to buy it at \$9 if it's at zero. So you still lose a hundred percent.

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So now the next question is what price does this Safeco company needs to hit to break even on your trade? So you spent \$40 to buy a hundred shares at \$9 or above, what's the price that the stock needs to be where this trade at least broke even? So for every penny above \$9 that this company goes, you can buy a hundred shares and you can sell it back immediately to the market for \$9. So if it's at 9 0 1, you can buy it at 9 0 1, sell it back at nine, and you make a dollar, you still spent \$40 and so you still lost \$39. So what you needed to do is to go 40 cents above \$9 in order to be breakeven to cover your initial investment. This doesn't factor in commissions, it doesn't factor in the bid ask spread in the market, but that's a topic we can talk about more later. But basically the stock needs go to about nine 40 or a little above in order to even, so how much do you make if the stock goes to 12? Well now you can buy it at 9 and immediately sell it back in the market for \$12. So the options value at that point is \$300 and you spent \$40 to have that, right? And so you've netted 260 bucks, which on initial investment of \$40 is a nice percentage return. So when we look at the profit and loss chart, again,

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This is how that maps out. You've lost your entire investment from anywhere from zero up to \$9 and then you start making it back at a hundred dollars per dollar it goes up, but you still have that initial \$40 to cover and the higher it goes up, the more money you make. So if somehow this teeny stock gets up to \$50, you make \$4,000, obviously extremely unlikely scenario.

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So let's talk about what that intrinsic value is, what that real money is in these options over time in understanding the value of an option. It's one of the important components so far. We've been talking about buying options that where the right to buy it was above the current stock price that had no current real value, but you're hoping that by expiration day that there'd be some real true inherent value in the stock. And that's what they call the intrinsic value. It's how much value if you wanted to use the option right now that it would give you. And so you can see the intrinsic value is going up at \$10. You have a dollar of intrinsic value per share. At 11, you'd have \$2 for that same nine strike option.

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So if you own an option that has real value right now, there's an expression for that in the options world when it has real money right now they call it in the money. There's another expression for options that don't have value right now that you can't use them to buy the stock at a cheaper price right now, and those are called out of the money. And then there's one more special term for that option right there. Basically the option or two options that are closest to the current stock price if the stock was at nine, and those are called at the money options. So let's go back to our option montage or the options chain. We're looking at Apple again, and this is from Thinkorswim. So we can see is that Apple is trading at 1 63. So every time you have the right to buy Apple at less than 1 63, they've added this sort of purple background to it. And that indicates that these are in the money options, that they have real value right now because you can buy the stock at less than the current price. Their 1 63 is pretty close to one 60 and 1 65. Technically the 1 65 would be at the money because it's a little closer. But oftentimes the two closest options if it's pretty close would be called at the money options. So in this scenario, the one 60 and the one 60 fives are sort of at the monies in the options chain.

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So we saw before the way that when you're buying this at money option, the way that the value plummeted just went towards zero very rapidly over time. So how does that picture look different if instead of having the right to buy something more than it's worth, if you have the right to buy it under its current value where it has intrinsic value. So this is what that chart looks like if you plug it in for a six strike option for our theoretical company when the option's at seven 50, assuming that the stock price doesn't actually change, but this is the number of days you have left, and you can see that as the days approach zero, the value's coming down, but it never drops below one 50. That one 50 is what we were just talking about. It's the constant real value, the intrinsic value, and the option. And that value won't go away as long as the stocks at that price. So in a lot of ways it seems like this option isn't as expensive to own or it doesn't decrease in value as much. And that's true. The total value of the option has a lot of inherent intrinsic value to start with. And so the total value of the option isn't dropping as much,

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But there's this other component of the value. So you have the intrinsic value, the real money that you can get out of the option right now. And then you have this other value, which is from the probability, the chance to capture stock movement over time. And that term is referred to as the premium or the time value. And that's how you arrive at your options value is it's a combination of the premium and the intrinsic value. So the premium will go zero by expiration. The intrinsic value will remain in there as long



as the stock is at the same level. So if you can buy the stock at less than the current value, if the strike is below the stock price, that intrinsic value will stay in the option. It's not affected by time. But if you just look at the premium and the option, the time value and the option over time for both the six strike call and the nine strike call, you see that the time value is plummeting towards zero for both in a very, very similar shape, similar. And so that's an important thing to understand about these options that while that intrinsic value may not be changing, you're still paying basically the same time value to own options that are in equal distant away from the stock price.

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Okay, so now we've talked a little bit about some things affecting the options value, a little bit of intuition around stock movement, volatility, the strike prices, that kind of thing. But let's just talk about when you'd buy a call when that makes sense for your trading plan. So first, just a simple question, is buying a call a bullish or a bearish bet? Meaning do you want the stock to go up or do you want it to go down? Do you want it to go up if you have the right to buy it cheap? Do you want that thing to get expensive? You can buy it cheap and sell it for more. Okay, so let's talk about some reasons to buy the call. So you can speculate on the stock price, meaning you can hope that the stock price goes up. You can also speculate on the options price or essentially hope that the assumptions that the market is making about the amount of volatility in the stock will go up. We're just going to touch on this very briefly today because it's a big topic that we'll hit on later. And a third option is, a third reason to own a call option is you can get some leverage kind of like buying on margin. So let's just talk about unquote speculation. You're hoping that the stock goes up

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In value. So two choices if you want the stock to go up in value or you can buy a stock or you can buy calls. There's other ways to bet on a stock going up that we'll talk about later on. If you're buying a stock, you don't have a lot of time pressure, you could be hoping that a whole industry improves, you be making a bet on the management of a company. But the only opportunity cost for owning a stock is essentially what else could I be doing with the money? Could I be going on a vacation or could I be putting it in a bank and earning some interest on it? But you don't have nearly as much time pressure when you're buying a stock, especially if you're not buying it on margin when you are buying a call. On the other hand, you have to not only be right about the direction of the stock, but you have to be right about the time. And as we saw that options, especially if you're buying an out of money option, that option is going to go to zero value by expiration and it's going to start accelerating. So if you have a hunch about a company or a drug that's going to get released or something like that and you think the stock's going to do great and you buy an option that's going to expire in 14 days,

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If the stock does nothing and then it doubles after 15 days, you still lost a hundred percent. So you have to be right, not only about what's going to happen but when it's going to happen. And that's part of the challenge, especially if you just are owning an individual option, what they call a naked call. That's one of the reasons that within trade machine and next week on Saturday, offi is going to give a nice in-depth run through of what trade machine is and how to use it. But there's a good reason that for the top six strategies listed on the trade machine today tab that five out of the six are spreads because spreads allow you to manage a lot of this risk in different ways.

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Now, it doesn't mean that buying a call can't be great for you if you do it right, and I think that draws a lot of people into buying calls or out of the money calls because there is the potential to make a huge return. And so here are different ways that the option has moved over time. So in this, what I'm looking

at here is if you bought, so stock is trading at 10 in this theoretical scenario, if you bought a six strike call, so this is in the money or seven or eight or nine or 10. So all these are in the money, this 10 is at the money, and these 11, 12, 13 are slightly out of the money if you bought it when there's 14 days left and the stock goes up \$2 within seven days. So the time value is starting to drop in this option because you've cut your time in half and the stock has gone up 20% in value. So look at what's happened to the options here. So this in the Money six strike option has gone up 50% in value. So that's what I was talking about when referring to buying an in the money option. Could be a little bit like buying stock on margin.

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It's almost like you had a 2.5 x margin. Now when you start talking about these more out of the money options, your initial investment is much lower.

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The chance that you lost a hundred percent of your investment was much higher. But in the scenario that somehow the stock did move the direction you wanted it to and the timeframe you wanted it to, you can see that the returns can be massive and that's what draws a lot of people into trying to buy calls. But as mentioned with rolling the dice, when you're buying an out of the money call, you need to go into it embracing the fact that you most of the time will lose that money. And there's nothing wrong with that as long as you are managing that decision correctly. Now, one other caveat is that option markets have width, and so the chance of being able to really buy this thing at 2 cents for most options, you couldn't, it'd be zero at 5 cents mean the market won't buy it from you and you'd have to buy it from them at 5 cents. So getting a 2 cent option for most stocks, the markets are too wide for that as a fear will tell you, most successful experienced options traders are not successful experienced option traders because they trade naked calls, they do much more complex strategies.

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There are times that it can be a reasonable approach. When I was first getting started in options trading where I had a couple years of experience back in the day, there was a big recall in Toyota because there was a lot of concern about the brake pedals. I don't know if and of you guys remember that, but the stock was getting absolutely crushed and it was getting crushed for a long time. And so a strategy that has worked for me, not that my trading experience is the most important thing, but occasionally there'll be a company that's a very good company that gets some bad news, and if the market way overreacts, it's still an extremely risky trade. But that's the kind of scenario that someone could consider taking a risky bet and trying to profit from it. Same thing, you could do that with spreads and take a lot less risk. A lot of people will buy calls going into earnings events. This can be done, but just understand that there's thousands of algorithms and prop shops and hedge funds and traders trying to do the same thing, and whoever is selling you that option is selling it to you because they think they're selling it to you for more than it's worth and that it's unlikely to come about. So you need to have a lot of conviction and have some kind of insight that the market doesn't if you are going to speculate that way.

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So in addition to trying to hope a stock will go up in price, you can also benefit from market volatility when you own options. So if the market starts to think that there's going to be a bunch of new volatility coming in, then the options will go up in price just because there's a bigger range of motion that the stock could cover. Typically, you wouldn't just buy a one-sided option in that scenario. So you do something called a straddle, which we'll talk about later. But one thing that can happen is even if the stock doesn't move,

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That the expectation of future movement can change and that can be a benefit or it can hurt you. But that is one way that your option can go up in value and we'll talk about volatility and implied volatility more in different classes, and then you can get leverage. And that was kind of an example that we saw with that buying that in the money option, that it went up 50% in value when the stock went 20% up in value. So you can either buy stock on margin if you're looking for that kind of leverage, or you can buy an in the money option, and there's times that what you would pay to own that option might even be less than you'd pay for your margin interest at your brokerage. So we kind of touched on a lot of topics around buying a call. So let's think a little bit about selling calls. So if buying a call gives you the right to buy a hundred shares of stock at a certain price for a certain time window, then what does selling a call give you? What gives someone else the right to buy your stock from you? Then that same at a certain price within that same kind of time window.

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So one question becomes, what if you don't own this stock? Now, there's a pretty good chance if you don't own the stock, if you don't have enough option privileges that your brokerage won't let you sell a call. But let's say that you do have the appropriate amount of privilege. I think it's options level two to do that then, or that's actually probably three to sell a completely naked option. So what happens if you sell a call, that call ends up in the money and someone says, Hey, I want to buy your stock. So the stock started at seven 50, you sold a call for nine and the stock goes up, but you didn't actually own the stock. What your brokerage is going to do is it's going to sell the stock anyway to that person. You're going to have to honor that agreement, and they're going to track it in your portfolio as you shorting stock. So if you sell a call and the call gets exercise, if you don't own the stock, you're going to have essentially minus 100 shares in your account for each contract. So let's look at this for a second. So

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Let's say you sold five contracts of a nine strike call and then it goes up to 10 50. What actually happens in your account? Well, the person has to still give you \$9 per share. So your account will have 4,500 extra dollars in it to start with, but you had to come up with a stock. And so they're going to go buy the stock out on the market and sell it to the person and credit you with a short stock. So what price did you actually short it for? Was it did you short it for nine? You shorted it for the market price. The market price at the time was 10 50. So what you did is you went out and you bought the stock for 10 50 and then you immediately sold it for \$9. And so what did this whole trade look like for you? Well, when you bought the stock for 10 50 and you sold it for nine, you lost a dollar 50 cents per share and you had to come up with the money to cover the original purchase, and then you got credited with some money back, but you netted being out \$750. The difference between those two,

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But seven 50 isn't the whole story. It's not your p and l, it's the amount from that last final piece of the trade. When you sold that call, you collected something for it and you collected 40 cents per share and you did that times 500 shares. So that ended up bringing in \$200 credit from selling that originally when it got exercised, you lost seven 50 and you ended up with a p and l of minus \$550 because that stock went up. So this is an important question to ask yourself when entering into any kind of options. Trade is like, let's walk through each of these. These are pretty fundamental tenets of trading options. You'll ask yourself the same questions when you're trading spreads and doing more complicated things. But let's look at what's your best case scenario. What does your position look like if the stock ends up right at your strike price, what's your worst case scenario and what's your breakeven price? So what's our best case scenario if we're just selling a naked call? So if stock's a seven 50 and you're selling the nine call, what do you want to have happen? You're going to want the stock to not go above nine, right? I'm going to dive into all the answers in a second. Okay? And what's your p and l? If the stock stays right at \$9,

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Well, at \$9, the person still not going to exercise the option, so it still doesn't have any value. So that's still that original amount of money you collected. What's the worst case scenario? Well, the stock can go infinitely high, and so there's not really a worst case scenario. And so looking at this original five contracts at 40 cents, your break even, you collected \$200, but every time the stock goes up a penny, you're starting to lose that money back at \$5 a penny. So your break even is at \$9 and 40 cents. So even though there's \$200 here, that kind of thing, it's quite easy to figure out your break even because it's simply the strike price plus the price per share of the option will end up being the breakeven. So these are a bunch of different p and I charts at a high level without any of the actual numbers showing. And these are all different trades and spreads that you can do in the market. But just to get sort of a conceptual understanding of these things, let's figure out which one of these is the right one for selling a call and let's kind of start eliminating

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The ones that we know are not right. So again, all of these charts as your profits go up, you move up on the chart and as your losses go up, you move down. These are the breakeven points, and stock is moving on the x axis. So when stock goes down in this direction and stock goes up in this direction, and so when you're shorting a call, you have limited or unlimited upside. And so the pictures that have unlimited upside will have a line that's going up and it could be going left or it could be going right, because upside means profits, unlimited profits. So a bearish position could have unlimited profits this direction. A bullish position is going to have unlimited profits in this direction. But any of the lines that have a cap where they go flat no longer, that means the upside is limited. It means the profits are limited. And so when you're selling a call, all you're going to make is just the initial amount on the call. And so you have limited upside. So we need a line that's flat on the top so we can eliminate these two. When you're selling a call, are you making money as the stock goes left and the stock goes right? Do you want the stock to increase in price or decrease in price?

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Well, if you sold the nine call and then the stock goes to 10, then you're going to be losing a dollar per share on that trade. And so when you're selling a call, you're doing better when the stock is moving down. And so anything that has a movement up into the right, we can eliminate as well.

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Now, question of downside. Does the red line, if you're selling a call, what's your worst case scenario? Well, your worst case scenario is that stock goes to a million dollars and that you have to deliver the stock to someone at \$9 a share, and you have to go out and buy it at a million dollars a share. So the downside is unlimited. It doesn't have one of these flat lines. So that's where we end up with a short call, limited upside, unlimited downside, and you do better. It's a bearish position. You do better when the stock stays low. And understanding these charts will be helpful as we get into spreads in future classes. So here's what it looks like if we map it all out, we make our profit of \$40 up until the strike prices hit, and then we start losing money. I simplified this to just be shorting one call, but if you're shorting five, it's just five times all of these values, and then the stock starts going down for one contract at a hundred dollars per dollar of stock movement. And if you have five contracts, then it'd be \$500 per dollar of movement. Okay? So that's what happens with a single strike at various stock prices. So we're talking about the nine strike here in terms of the profit and loss at various stock prices.

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But now let's talk about what if you actually shorted a call at different strikes. So instead of saying, okay, the stock movements variable, let's just say that we know the stock's going to move from 10 to 12. What

happens if you sold different strikes, if you sold to 6, 7, 8, 9, 10 strike, et cetera? So again, this is the same chart we looked at before for being long a call, but now these are all losses because the option moved up. I mean, the stock moved up in value, had it moved down in value, you would just collect your initial amount, you'd collect the premium, you'd collect the time value if it moved down in value. When it moves up, you can see that this thing can move drastically against you. So as attractive as buying this was in the good scenario that this thing went up, substantially selling it can have a catastrophic loss. So generally speaking, when people sell a call, they don't just sell a naked call though it does happen. But the more typical scenario is that they're combining selling a call with owning stock to start with, which they call a cupboard call. So let's talk about that a little bit.

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So this is what the p and I chart looks like of stock. Every time the stock goes up, your profit goes up and it moves steadily up. And right, as we just discussed, this is what shorting a call looks like. You make your maximum below the strike price, and then you start losing money above the strike price. But what happens when you do both of those things at once? So let's just ask ourselves the question, the kind of basic things you should understand before entering into an option position. So what happens if the stock goes to zero? What happens if it goes to a million or some high value? And what happens if it ends up right where the strike price of the option is? If the stock goes to zero, when we now own stock at \$7 and 50 cents per share, and we collected \$40 for one contract, what does our profit and loss look like? If stock goes to zero, well, you spent \$750 and that goes to zero and you have a \$40 credit and you're going to keep that credit, but you're still going to lose \$710 if it goes to a million.

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Well, you gave the right to your stock away at \$9, so you're not going to benefit above \$9. So you make \$150 on your stock, plus \$40 on the call, and then you walk away with \$190. And what happens if the stock lands right at the options strike price? Well, it's actually the same thing in terms of profit and loss. You make 150 on the stock, you make 40 on the option. The difference is that you're going to still own the stock because no one's going to exercise the option if it's just the same price that they could just buy in their brokerage. So that's what this picture looks like in terms of the profit and loss for selling this nine call, you're going to make some extra money on stock as it goes up. You're going to make the 40 bucks on the call and your profits are capped at nine, but you're going to keep losing money all the way down to zero. So when you look at these p and I charts, you have stock p and I, you have the short call p and I, and when you combine them, you get this you. So when you just do this in your head when you're combining positions, these kind of flat lines don't factor in.

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You take the upward movement up to this point, and then you have the upward movement of the stock and the downward movement of the short call balance out and you end up with this p and I chart. So if anyone has questions at this stage on calls, you can feel free to fire them off. Otherwise I'll just push on into puts. Let's see here. Great. Okay, I'm just going to go ahead and push on to the next section. Okay, so we're going to talk about three different scenarios with puts. The first thing we're going to talk about is shorting, but with a fixed downside. So definition of a put, here's the kind of boring financial definition says a put option. It's a derivative that gives the holder the right to sell an asset at a specified price for a specified amount of time. Okay, so when you're buying a put, is it bullish or bearish? Do you want the stock to go up or do you want the stock to go down? Want it to go down because you now have the right to sell the stock. And if you can sell the stock at a lower price than you, that's where you make your money. So if you have the right to sell a hundred shares of Safeco stock at \$6 per share for the next 30 days and the right costs you \$10, let's just walk through one of these scenarios. So what's your worst

case outcome? If you bought an option, it costs you \$10 and the option gives you the right to put stock on someone.

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What's the worst case outcome? What's the best case outcome? What happens if Safeco lands directly at \$6 and what's your breakeven point? So if the stock goes up to a million dollars, you lose your initial investment, you're not going to sell someone stock at \$6. If it cost a million dollars, what's the best case outcome? Well, the best case outcome is it goes to zero or a penny where you have the right to sell the person the stock at \$6, but you can go out and buy it for essentially nothing. And so you make 599 or you make \$600 minus the \$10 that you invested originally, and you end up with a 589 or \$590 profit. What happens if this company ends up right at your options strike? You still lose everything because it doesn't have any value at that point. And what's your breakeven point? Well, every time this thing goes down a penny, you make a dollar because you're controlling a hundred shares. And so you need it to go 10 pennies below \$6 in order to break even on your position.

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Here is what our p and I chart looks like. You see that above \$6, you've lost your initial investment and below \$6 you start making a hundred dollars back per dollar that the stock goes down up until it hits a value of zero and you still have that initial \$10 investment. And so if the stock doesn't do anything, you're losing the 10 bucks. Okay, so let's think about what that looks like if you're combining buying an option when you already own stock. So here's what stock p and I looks like. And here we just went over, this is what if you own a put, what does that p and I look like? You make money as the stock goes down, and that's kind of the opposite of the stocks p and I. So if you combine these two things, let's ask ourselves the questions. So you have a hundred shares of Safeco at seven 50 and you also bought a put one put gives you the right to control a hundred shares and you bought the put at \$6 for Safeco. So this actually is for \$10 here. So it's a hundred shares times 10 cents, so that's \$10.

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So you have the right to sell a hundred shares at \$6 up until expiration. So what happens if the stock goes to zero?

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You're going to lose between seven 50 and \$6. But if the stock goes down further than that, and even when the stock goes to zero, you're going to exercise your right to sell the stock. That's what the gives you, gives you the right to sell the stock at a certain price. So you own this stock, the stock's gone down to a penny or a dollar, but you have the right to sell it to someone at six. And so you're going to use that, right? And you're going to say, Hey, I want to go back in time as if I could go back in time. I want to sell you the stock at \$6 because this thing plummeted. So that's going to put a floor on your loss at \$6. So instead of realizing the entire loss of seven 50 down to zero, you're only going to realize a loss between seven 50. And so you're going to lose a dollar 50 a share and then you pay \$10 to have that, right? So you're down 160 bucks, which is 21%, but that's a lot better than being down a hundred percent. And what happens if the stock goes to a thousand dollars? Well, you have the right to sell it at six. We don't have to use that, right? So if a stock goes to a thousand dollars, you're just going to happily watch the stock right up to a thousand dollars.

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That put isn't going to have any value, but it has very little impact. You're going to make \$992 a share, lose a teeny bit for the put, and you still make a fortune. And what happens if the stock drops exactly down to six? Well, you end up kind of in the same scenario you did here at the beginning, but you don't actually use the put because having the right to sell it when you could just sell it in the market doesn't really have any advantage. So you're still going to lose the 21%, but you're still going to own the stock in this scenario unless you really want to exercise the option which you have the right to do. But it would just be the same as selling it in the market. So when you combine these two p and Ls, the stock p and L and the long put p and L, what you see is you have limited downside and unlimited upside, and that sounds pretty attractive. And this can be an excellent strategy for someone that gets nervous owning stock in a volatile market. I've known a lot of people that are stock investors and they can't tolerate the risk or the feeling of risk and uncertainty in a market. Knowing that worst case scenario you're going to lose 20% can help calm the mind a lot. And so that can be helpful when the market's volatile, it's going to be an expensive time to buy that option, but still it could be better than selling your stock at a big loss.

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So having that insurance for 30 days costs you \$10 on a \$750 position. So that's one and a third percent. So that doesn't seem bad,

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But it's worth looking at. If you did that 12 times in a row, if did it for a whole year, then you've hurt your stock returns by 16% and 16% by most standards would be a pretty good year for your stock returns. So if your stock went up 16% and you insured it with options the entire year in this scenario that we're talking about, you'd just break even. So if you do this over the long run, we'll definitely eat into your profits and the closer your insurance is to the current value of the stock, the more it's going to eat into your profits. Okay, let's look at one final scenario in today's class. And that's a way to use a put to do something very similar to a buy limit on stock. So let's look at what selling a put means. So if you buy a put, you have the right to sell stock to someone at a certain amount for a certain amount of time. When you sell a put that gets reversed, you're giving someone else the right to put their stock on you at a certain price for a certain amount of time. So you're obligating yourself to buy it from someone if they tell you to buy it the price you've agreed on.

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So is this bullish or bearish? Well, should you do better if stock goes down or stock goes up? Well, if someone has the right to sell stock to you, if they can force you to buy stock at a certain price, let's say \$6, if the stock goes to \$1 and they're forcing you to buy it at \$6, then you're going to lose \$5 per share on that trade. So in that sense it's bullish because you do better as stock goes up. So let's ask ourselves the same question. What does position look like at zero? What's it look like if stock goes up to a hundred, what happens if stock lands at exactly the strike price and what's our breakeven point? So we're talking now about a \$6 strike put in Safeco, and that put, we sold for \$10 and we collected \$10 when we sold that put. Okay, so if the stock goes to zero, then the owner's going to sell you the stock at six, so you're going to have to buy the stock at six, but if you want to sell it, you're going to get zero for it or a penny. And so you're basically going to lose something like \$600 on the stock trade and you only made \$10 for selling the option. So you're going to lose something like 590.

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If the stock goes to a hundred or a hundred thousand, then their right to sell it to you at \$6 doesn't have any value, they're not going to use it and you're just going to keep your initial 10 bucks if the stock settles at exactly six. It's kind of the same thing. They're not actually use their right to sell it to you, and

so you're just going to keep your 10 bucks in terms of the break even. Every time the stock goes down a penny below six, you're going to lose a dollar. And so your break even is 10 pennies below six. So one question is what's your position going to be afterwards? So if you give someone a, you sell a put and they exercise the put, they're going to sell you the stock. When you buy the stock, you are going to end up owning the stock. So this is just a comparison of the p and I from a long put to a short put. When you have a long put money as the stock price goes down and the reverse is to the short put. So here's what that p and I chart looks like. You keep your 10 bucks above the strike price and then you start losing a hundred dollars per dollar price movement below because you're going to be buying the stock at this price. And as the stock goes down, that's going to mean if you wanted to sell the stock that you'd be underwater.

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So now let's compare that for a quick second to if you did a buy limit order. So if you said, I want to buy stock anytime it goes below \$6, what does that look like? Well, if it goes to zero, you still lose 600 bucks. If it goes to a hundred, well you have no profits, you never were able to buy in at \$6, at \$6 your breakeven, and that's the situation. So in some ways it starts to look a little similar to what we just talked about except if the stock doesn't move, you don't collect anything. So basically this is the same chart we just looked at except it's just down \$10 lower than if you just sold the put,

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It's literally the exact same chart except everything's just down \$10. So the question becomes, well, if I want to a buy limit order, if I know I want to buy the stock, if it goes down to \$6, why not just sell a put instead of doing a buy limit order? If I sell a put, I collect a little bit of money and that's a valid strategy, but there are some caveats to it. But when you look at these things side by side, you see that it's the same p and I chart almost identical, except that you collect a little bit of money for the put. So if you know you want to get into stock and there's a lot of volatility in it and the options are expensive and no matter how low it goes, you're willing to get into it at a certain price, it's going to be a very valid way to get into it is to rather than putting a buy limit order in, you can sell a put and you'll take a credit for that possibility of getting in. Now, there's a few things that are worth mentioning because they're not identical.

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When you do a buy limit, if it ever hits \$6, you're going to end up owning a stock. And so if it dips down to five 90 and goes up to six 50, you're going to buy in at \$6 or at 5 99, and then you're going to realize the profits as it goes back up when you're selling a put, that's probably not the case. If it just dips down and comes back up, you're probably not going to own the stock. So you'll keep the money for selling the put, but you're probably not going to own the stock. Likewise, if someone decides to sell you the stock, they're going to probably do it on the very last day of expiration and they're only going to sell it to you if it looks bad to them right then, which means short term, if you do end up owning the stock in the immediate future, you're going to look like you have a negative profit and loss. There's a very tight range where you'll show an immediate profit on the overall trade, but basically you're, if you own the stock, it's going to be at a loss. So it needs to be the kind of stock that you're happy to own, even if it goes lower because you have confidence it's going to go up from there over time.

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Well, another thing is that if you decide to sell a put at seven 50 when the stock's at seven 50 for \$6 and then the stock starts going down, if you put a limit order in, you can just change your mind. If the world starts looking a little crazy, you can just get out of that and it doesn't cost you anything to exit your limit order. But when you sold a put, if the stock starts going down in value very quickly and you decide, you

know what? I don't want own that stock, it's going to cost you money to get out of that decision because the option is going to start moving against you. So if you no longer want to own the stock, then you're going to have to buy back option. That option probably went up in value, and so that's going to cost you something. So they're not identical, but there are times where you have enough conviction in the SOC where you are happy to own the stock no matter what the scenario is, as long as it goes below a certain value and you can get paid to put in that limit order.

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Okay, so we're basically done. Now, this whole thing is going to get emailed out. It's all record and it'll be sent to everyone. And I'm just going to do a real quick summary just to kind of help lock it into our heads. So just asking the question, is buying a call bullish or bearish once you own a call, do you want it to go up or down? You want it to go up because then you can buy the stock at lower than the current price. Is a higher strike more or less valuable with a call?

[\(01:27:05\)](#):

Well, you want to be able to buy it at a lower price, so the lower strikes are more valuable. And if you own a call and the market starts expecting more volatility, does that help or hurt you? And the answer is that it makes your option more valuable. So that actually helps you. And does a call have limited upside or unlimited upside? A call has unlimited upside and it has limited downside. Okay, so same thing for short calls. Is this bullish or bearish? If volatility increases when you're short, does that help or hurt you? Does the short call have limited or unlimited upside and does it have limited or unlimited downside?

[\(01:27:55\)](#):

When you're short a call, you don't want the stock to go up. If you're short any option and the volatility in the market starts to increase, then the option becomes more valuable and that hurts you at least in the short term p and l, because you've sold something that's going up in value. Short calls have limited upside and unlimited downside. Okay, we're just going to do this with puts and then we're done. So for long puts is buying a put a bullish or bearish bet? Is a higher strike more or less valuable if the volatility increases when you own the put, is that good for you or bad for you? And do you have limited or unlimited upside? And do you have limited or unlimited downside?

[\(01:28:45\)](#):

So you want the stock to go down when you own a put. The higher strikes are more valuable because you can sell the stock at a higher price when you own an option. If the market starts expecting more volatility, that makes the option more valuable and you have unlimited upside with a put and limited downside. Last one is selling a put bullish or bearish. Does volatility help or hurt you? Do you have limited or unlimited upside, unlimited or unlimited downside? Shorting a put is actually bullish because if the stock goes to zero, you're going to have to buy the stock at more than zero.

[\(01:29:30\)](#):

When you're short in option, volatility makes the option more expensive, so you don't want that. You have limited upside and you have unlimited downside when you're short in option. Okay, so that's kind of the end of our real basic introduction to options. We touched on some topics that are very deep and important topics like volatility that we'll go into in a lot more detail in future classes. Future classes will touch on things like spreads and delta and implied volatility and a lot of that great stuff. But thank you all very much for attending. If there are any questions at this point, we're happy to take a few questions. And yeah,

Ophir Gottlieb [\(01:30:16\)](#):

I say the number one question by far was simply when is the second course? So the next course is going to be March 17th. That's a Thursday, Thursday evening. The next question was when is the how to use trade machine webinar? That is in a week from today. We'll send that out. The next question was, will we get a recording of this? You will. And my favorite slide, which is probably the most valuable, even if people are just investing in stock, was that detailed slide you had on the difference between having a limit buy order versus shorting a put wildly misunderstood overused strategy selling puts with a lack of understanding of what the differences are. And that slide should save people a ton of money. At the very least, if they are selling puts, they'll know why. So that slide in and of itself is worth, I dunno, 3 million. So we're charging 3 million, no. Okay, so that's it. Yeah, most of the QA was straight down the middle. When are we doing this? Again, I think the questions. Yeah, I think questions will start coming in as we get to more advanced options topics. And we ran exactly an hour and a half, which is what was planned. So perfectly done.

Jason Hitchings ([01:31:49](#)):

Well, thanks everyone for attending, and I'll look forward to seeing you all at the next one.

Ophir Gottlieb ([01:31:53](#)):

Okay, emails going out pretty soon with the recording. Bye guys. All

Jason Hitchings ([01:31:57](#)):

Right, see everybody.