ARMOUR

# The Real Math Behind Prop Firm Challenges

The probability math behind your chances of getting a payout. And what you can actually do to tilt the odds.

**You think you have a 22% shot at a payout.**
**It's actually closer to 1%.**

Here's what the numbers actually look like.

## 01 The Formula Nobody Shows You

Before you place a single trade, the challenge structure already determines your pass rate. It's just math:

**PASS PROBABILITY PER PHASE**

**P(pass) = Max Drawdown / (Profit Target + Max Drawdown)**

This is the probability your equity curve hits the profit target before hitting the drawdown limit. No edge factored in. Just the raw structure of the challenge. If you have an edge, your odds are better. But this baseline tells you what the challenge **allows** before your skill even enters the picture.

### Run It on a Standard 2-Step

Here's what most firms look like:

| PHASE | PROFIT TARGET | MAX DRAWDOWN | P(PASS) |
|---|---|---|---|
| **Phase 1** (10% target) | 10% | 10% | **50.0%** |
| **Phase 1** (8% target) | 8% | 10% | **55.6%** |
| **Phase 2** | 5% | 10% | **66.7%** |

**Combined pass rate for both phases:**

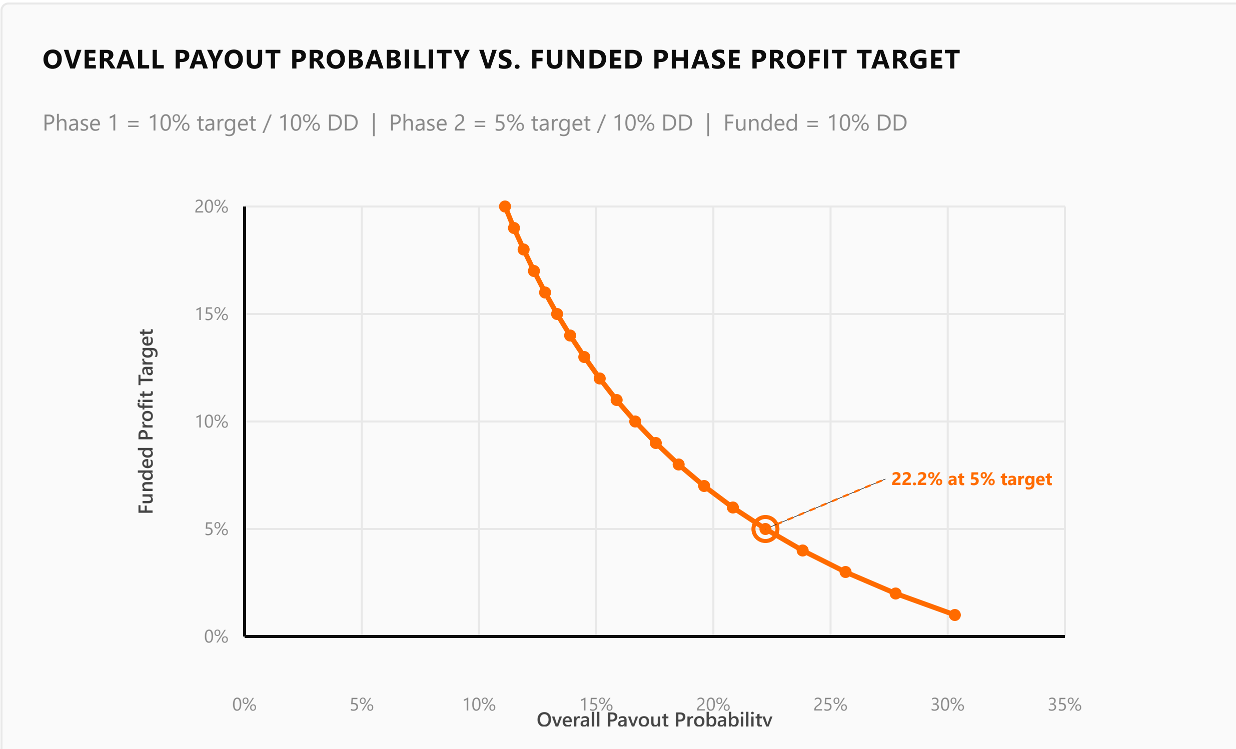
- With 10% Phase 1 target: 50.0% × 66.7% = **33.3%**
- With 8% Phase 1 target: 55.6% × 66.7% = **37.0%**

**SO WHAT?**

**One in three should pass both phases on paper. But passing doesn't mean getting paid. You still have to survive the funded phase. That's where it falls apart.**

## 02 The Funded Phase: Where It Gets Worse

You passed both phases. Now you're funded. Same 10% drawdown limit, but now you need to hit a profit target to actually get paid. Higher target = lower chance of getting there before the account blows.




At a 5% funded target, your overall payout probability is **22.2%**. At 10%, it's **16.7%**. At 20%, **11.1%**. And this is the theoretical ceiling, before the real world gets involved.

> **READ THAT AGAIN**
>
> **Even in the best case (5% funded target, no friction, no rules), fewer than 1 in 4 traders get a payout. That's just what the numbers say.**

# 03 Why 22% Theoretical Becomes 1% Actual

The math says ~22% at best. The actual payout rate across the industry? About 1%.

### 1. Commissions and Spreads

Every trade costs you. Commissions, spreads, slippage. The formula on page 2 assumes none of that exists. Your account pays all of it. One trade barely registers. Over a hundred trades in a challenge phase, it's a constant bleed that tilts the odds against you. And it compounds. By the end of a 30-day phase with high trade frequency, friction alone can account for a several percent drag on your equity curve. That's the difference between passing and failing for a lot of accounts.

### 2. Consistency Rules

A lot of firms won't let one big day carry your account. You can be net profitable and still fail because Tuesday was too good.

### 3. Time Limits

30 days per phase. Your strategy might need 200 trades to play out. You get 20-30. That's like judging a coin after 5 flips.

### 4. Your Own Head

Money on the line. Clock ticking. You start cutting winners short and holding losers way past your stop. Then the revenge trades start. You know better and you do it anyway. If you've ever blown an account doing something you told yourself you wouldn't do, you already know how this goes.

### 5. Funded Phase Restrictions

You passed both phases? Now there's scaling rules, news trading bans, weekend holding restrictions, and withdrawal minimums. Most traders don't read these until after they've been caught.

**THE REAL NUMBER**

Industry estimates: roughly **1%** of traders who enter a 2-step challenge actually get a payout. 22x lower than the theoretical ceiling. That gap isn't an accident.

## 04 What This Actually Costs You

Most active traders buy about 2 challenges a month. Here's what that looks like after a year. Just the fees, nothing else:

| CHALLENGE FEE | TIMEFRAME | TOTAL SPENT ON FEES |
|---|---|---|
| $100 | 12 months | **$2,400** |
| $300 | 12 months | **$7,200** |
| $500 | 12 months | **$12,000** |
| $1000 | 12 months | **$24,000** |

> **DO THE MATH ON YOURS**
>
> **$300 challenges, twice a month, that's $7,200 gone in a year. At a 1% payout rate, you need about 100 purchases to statistically see one payout. That's $30,000 in fees before you get paid once.**

No course is going to fix this. Swapping indicators won't either. The fee structure is what it is, and genuinely good traders lose money to it every year.

Challenge fees are a **predictable, recurring loss**. You can calculate exactly how much you'll spend this year, and almost nobody ever does. Once you see the number, it changes how you think about the whole game. The bottleneck is rarely your skill. It's having **enough attempts** for your edge to actually show up in the data. Fees eat your runway, and without runway your edge never gets a fair shot.

Improving your win rate by 2%? Sounds nice. Changes almost nothing when the structural math is this brutal.

> **BOTTOM LINE**
>
> **You're not going to out-trade this. Something structural has to change.**

# 05 How to Actually Improve Your Odds

Everyone starts with strategy. Wrong order.

## 1. Know Every Rule

Drawdown limits, profit targets, time limits, consistency requirements. You probably know these already. What you probably don't know are the **hidden ones**. There are restrictions buried deep in terms of service that firms enforce but never advertise. Execution patterns that trigger manual reviews. Behavioral flags nobody tells you about.

Get caught on any of them and you're disqualified. Profitable or not. A surprising number of funded accounts get killed by a rule the trader never read, not by drawdowns.

Read the full ToS before you take a single trade. The traders getting payouts aren't necessarily better than you. They just didn't hand the firm a reason to cut them.

## 2. Trade Less

Remember the formula from Section 1? It assumes zero transaction costs. Your actual account pays commissions, spreads, slippage, and swaps on every single trade. One trade barely registers. But if you're taking 10+ trades a day across a 30-day challenge, that friction eats your equity. Your real pass rate drops well below the theoretical number.

**Cost erosion.** Take fewer trades. Each trade you skip is a cost you don't pay. Your real probability stays closer to the theoretical ceiling when there's less friction dragging it down.

More trades feels like more chances. But every one of them costs you, and the costs add up faster than the wins.

## 3. Strategy Comes Last

**Once rules and trade count are handled, what you trade barely changes the math.** Breakouts, mean reversion, scalping. The probability formula only cares about the drawdown-to-target ratio. The firm sets both of those numbers before you open a chart.

Does a genuine edge help? Sure. But almost every trader overestimates their edge. Meanwhile the same traders pay zero attention to the friction eating their account. Or the hidden rules that could disqualify them. A guy with a basic setup and 30 clean trades has better odds than someone running a complex system with 200 trades and an accidental rule breach.

**WHAT ACTUALLY MOVES THE NEEDLE**

The single biggest edge you can give yourself has nothing to do with charts. It's knowing the rulebook cold and keeping your trade count low enough that friction doesn't eat you alive. Most traders spend months tweaking entries and 5 minutes on the terms of service.

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