

Bryan Flower's Math Cheat Sheet

Drawdown	Recovery Rate
5%	5
	11.1%
20%	25%
30%	43%
40%	67%
50%	100%
60%	150%
70%	233%
80%	400%
90%	900%

R-Multiple	Required Winrate
0.5	67%
1	50%
1.5	40%
2	33%
2.5	29%
3	25%
3.5	22%
	1
<i>General formula</i>	$\frac{1}{(1 + R \text{ multiple})}$

Losing Streaks and loss of capital

Losers in a row	Loss % (1% risk)	Loss % (3% risk)	Loss % (5% risk)
1	1.0%	3.0%	5.0%
2	2.0%	5.9%	9.8%
3	3.0%	8.7%	14.3%
4	3.9%	11.5%	18.5%
5	4.9%	14.1%	22.6%
6	5.9%	16.7%	26.5%
7	6.8%	19.2%	30.2%
8	7.7%	21.6%	33.7%
9	8.6%	24.0%	37.0%
10	9.6%	26.3%	40.1%

Expectancy

(Winrate * Position size * R-multiple) - ([1-Winrate] * Pos. Size) = **Trade Expectancy**

Example:

Winrate = 55% | Pos. Size = 2% | R-multiple = 1.5

Trade Expectancy =

$(55\% * 2\% * 1.5) - ([1 - 55\%] * 2\%) = 0.75\%$

An expectancy of 0.75% indicates that each trade has a value of 0.75% over the long-term.

Consecutive Losses

Winrate	1	2	3	4	5
70%	30%	9%	2.7%	0.8%	0.2%
60%	40%	16%	6.4%	2.6%	1%
50%	50%	25%	13%	6%	3%
40%	60%	36%	22%	13%	8%
30%	70%	49%	34%	24%	17%

Likelihood of consecutive losses based on winrate

Exponential Growth

Example:
Winrate: 55% | Pos. Size: 2% | R-multiple: 2
Account size : \$10,000

	Gain per trade
1. trade	\$ 130.00
10. trade	\$ 146.03
50. trade	\$ 241.66
100. trade	\$ 466.96
200. trade	\$ 1,699.12
500. trade	\$ 81,857.14