## **Given some amount of cash X, what is the most of Stock Y that can be bought at its current price, given a worst case scenario stock price of Z?**

**Inputs:**

Cash = X

Stock name = Y

Worst case = Z

Stock Price = SP

**Calculations:**

Maintenance Margin per share = mmps

Potential loss per share = SP - Z

**Outputs:**

Amount of stock = A

Potential Loss = A \* (SP - Z)

Maintenance Margin = mmps \* A

We want to to buy some amount A of stock Y such that the Potential Loss is less than the difference between the cash we have and the Maintenance Margin:

A \* (SP - Z) < X - (mmps \* A)

SP - Z < X/A - mmps

SP - Z + mmps < X/A

A < X/(SP - Z + mmps)

See [How many stocks can I buy?](https://github.com/HFloyd97/Projects/blob/main/Calculate%20Maximum%20Stock%20Amount%20Using%205X%20Leverage.ipynb)