Goal: maximize revenue of all flights.

☆ Can control the ticket pricing per day of each flight.

↳ unsold seats avail. tomorrow

$\frac{1}{1-x}$

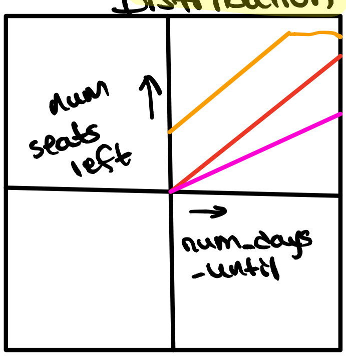
↳ if a flight leaves today and has unsold seats they are unavail. tomorrow.

($\mathbb{N}$) Natural Number

Random walk stochastic process

CDF of Parameter Distribution

↳ variables in the pricing function



\# num_days_until_flight ~ x Uniform

\# num_seats_left ~ f(x) ~ Uniform

$f(x) = mx + b, \{m \in \mathbb{R}^+\}$

\# demand_level

max(0, demand − p), like ReLu.

↳ quantity_sold = demand_level − price

↳ demand(·,·,·) ~ U(100, 200), → CLT and

$\mu \to \mathcal{N}(1, 0)$

CDF of demand level

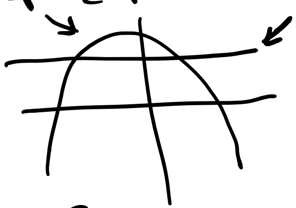
CDF of seats ↳ max (tix) = max(seats)

CDF of days

(*) seats and days seem monotonic.

$-p^2 - d \cdot p$

price x tix

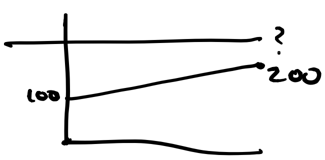


200 flights, 100 days, 100 tix, → avg rev.

" ", 14 days, 50 tix, → avg rev.

profit

" ", 2 days, 20 tix, → avg r.



" " 1 day, 3 tix, → avg r

price*demand − (price)^2 → find local maxima.

avg avg rev.

max price : price * min(tix, demand − price)

max

when tix < demand − price → tix + price < demand

demand − tix ≥ price