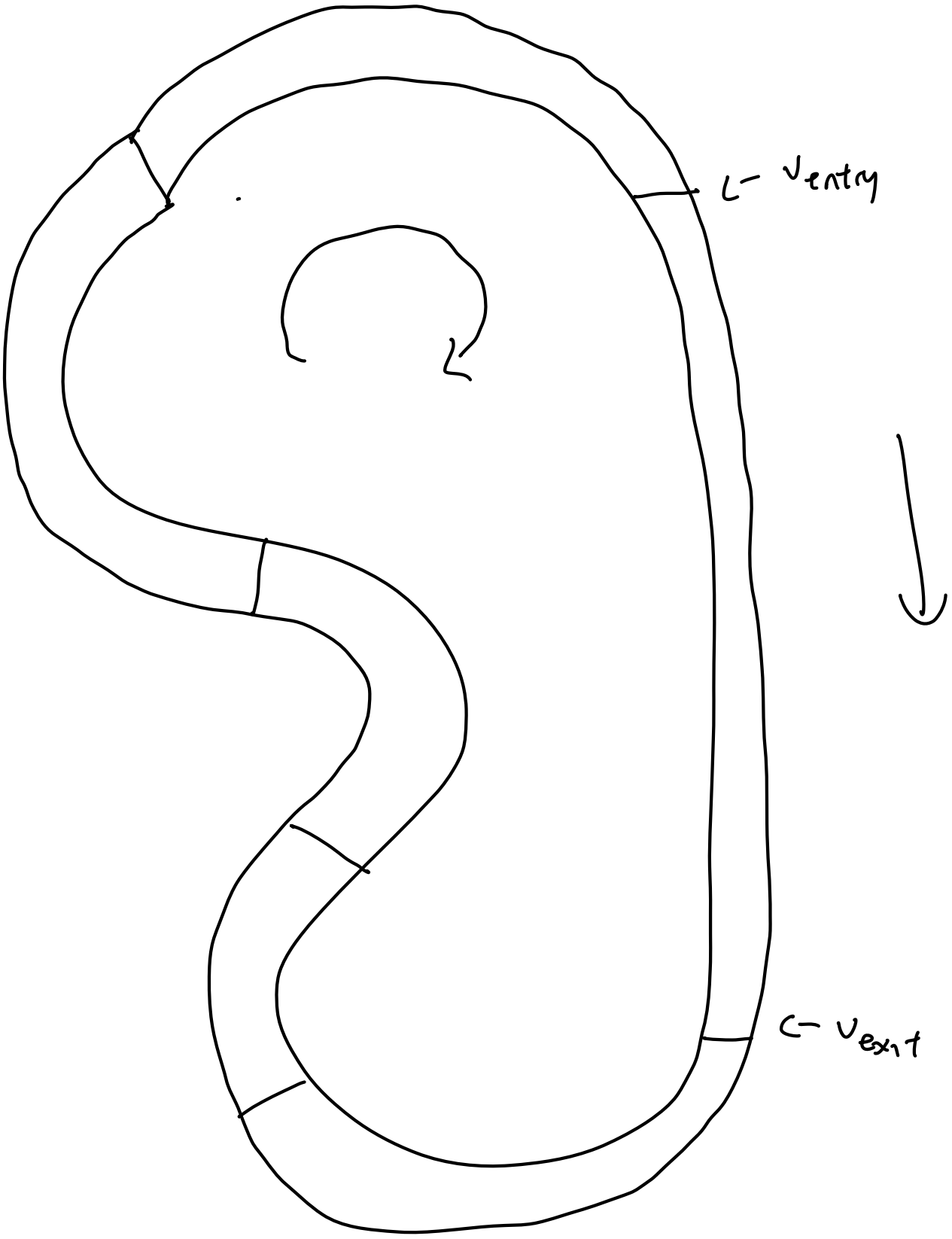
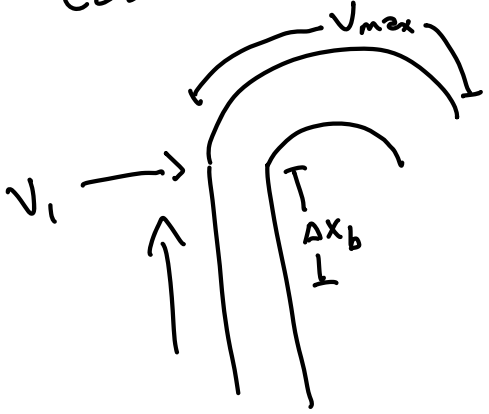
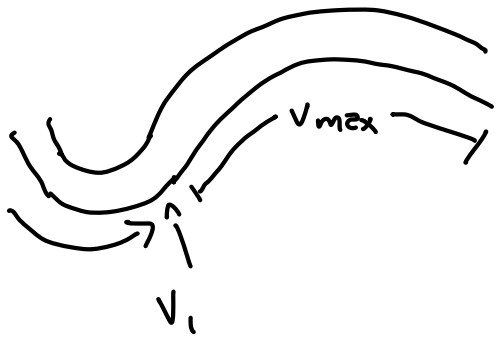

v_{entry}
v_{exit}

Case 1



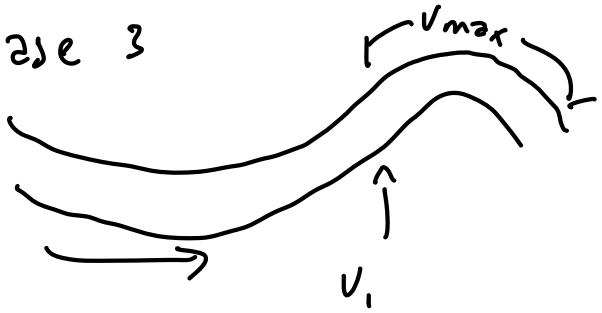
- straight to turn
- $V_1 > V_{max}$
- use straight line accel model then use straight line decel model

Case 2



- tight turn to less tight turn
- $V_1 < V_{max}$
- constant velocity

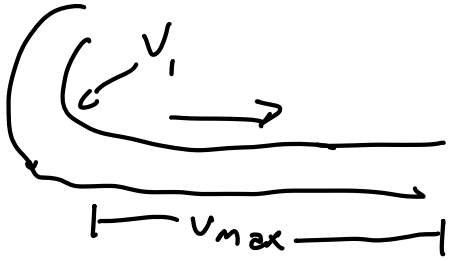
Case 3



- wide turn to tight turn
- $V_1 > V_{max}$
- straight line accel up to V_1 then constant velocity then straight line decel

Same

case 4



- turn into straight
- $V_1 < V_{max}$
- constant velocity

Pseudocode Case 1

underestimate

- Find max braking force
- Find time it takes to decel from V_i to V_{max}
- Find distance it takes to decel
  - assume constant decel
- Find new section length
  - initial sec length - distance to decel

overestimate

- Find new exit speed
- Find new braking force
- Find new time to decel
- Find new distance

loop n times

Case 3a

- entry velocity is equal to max velocity
- Constant velocity w/ straight line decel model

Case 3b

- entry velocity is less than max velocity
- ???
- constantly find braking distance
- speed up until max velocity is reached <u>or</u> distance left = braking distance

Pseudocode Case 3b

- accelerate
- calculate braking distance
- if braking distance $\geq$ distance left stop accelerating and start decel
- if v_{max} reached stop accel
  - go into constant velocity model
- Decel model

Boolean for accelerate