Ultimate Tic Tac Toe! In 3D!

Single Player

Two Players

"start"

Rules of the Game

- A TTT game, but each spot is a game of 3D TTT
- To win, win 3TTT games in a row, alternating picking between players
- Click on a finished 3D game spot to see its 3D model
- "r" is for restart
- "Up" and "Down" is for adjusting model rotation
- Play 3D pieces by clicking on the 2D grid

"rules"

2D Board

Player —, Pick a spot

X | O | O
X

Model of row, col

Click on a spot to see its visualization

"square"

3D sub-game at row, col

2D Board

X|O|O
X

current row, col

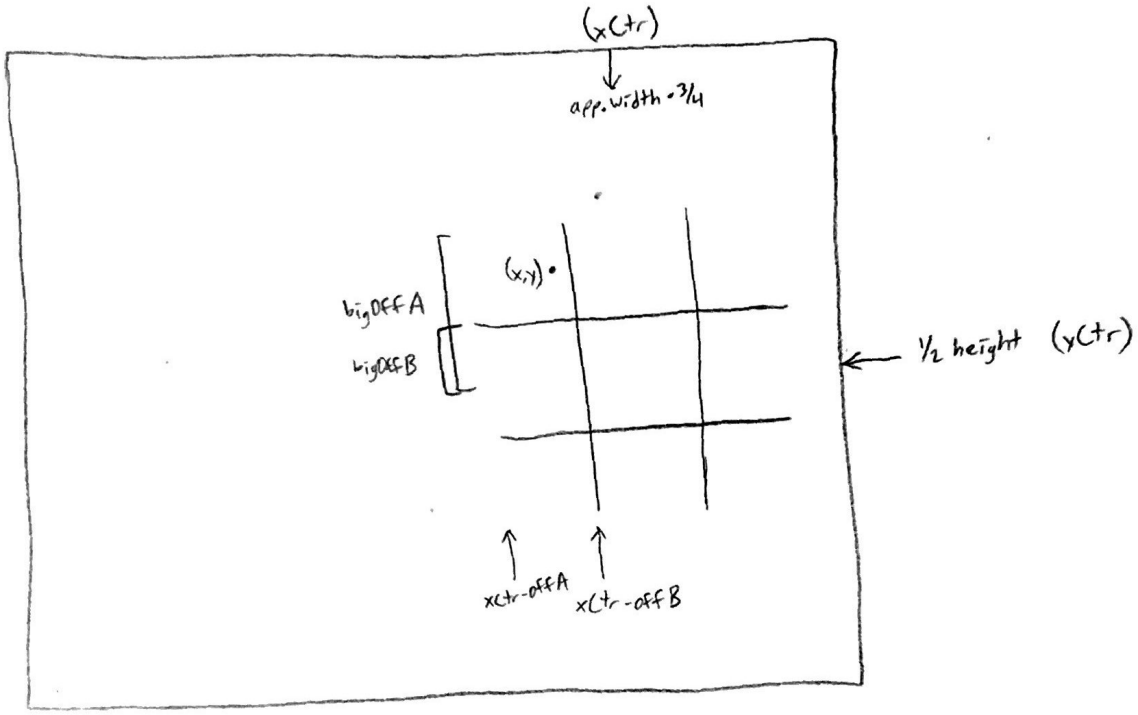
Top

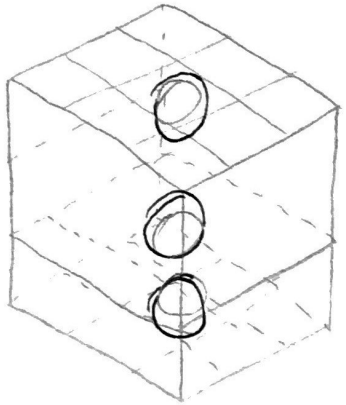
Player —, Your Turn!

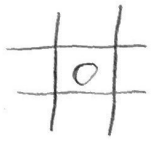
Middle

Bottom

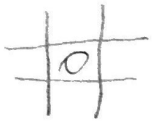
"Cube"


(xCtr)
app. width · 3/4
(x,y)
bigOffA
bigOffB
½ height (yCtr)
xCtr-offA
xCtr-offB



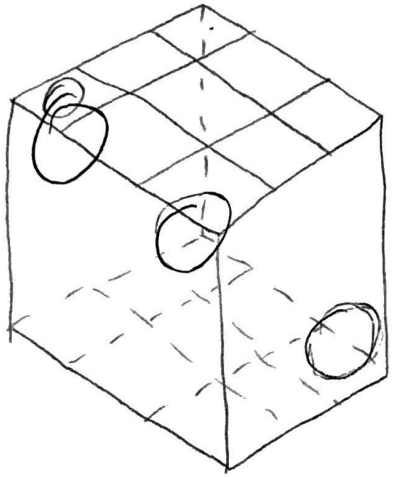


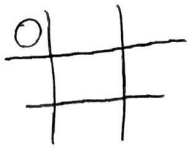
Top

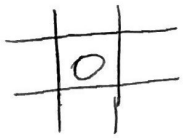


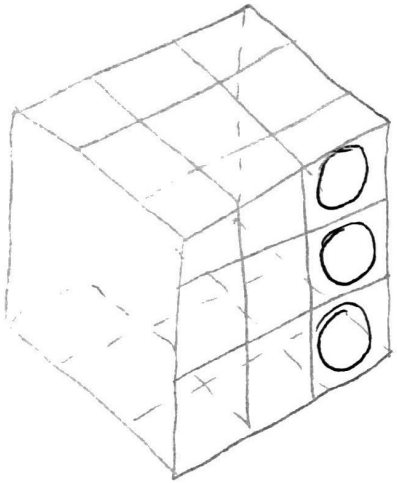
Middle

Bottom





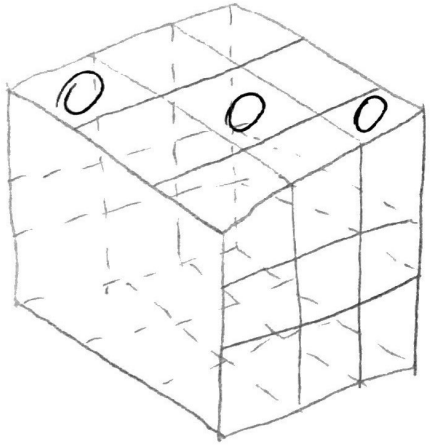




Top

Mid

Bottom

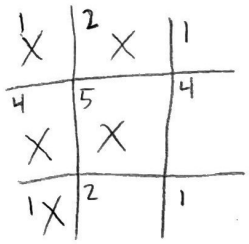


Top

Mid

Bottom

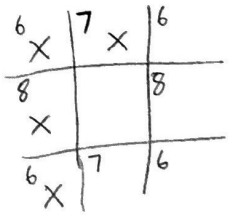
Finding Win



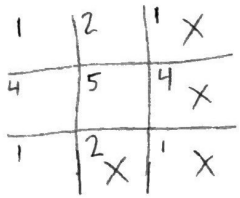
~~Only need to check opposite side~~

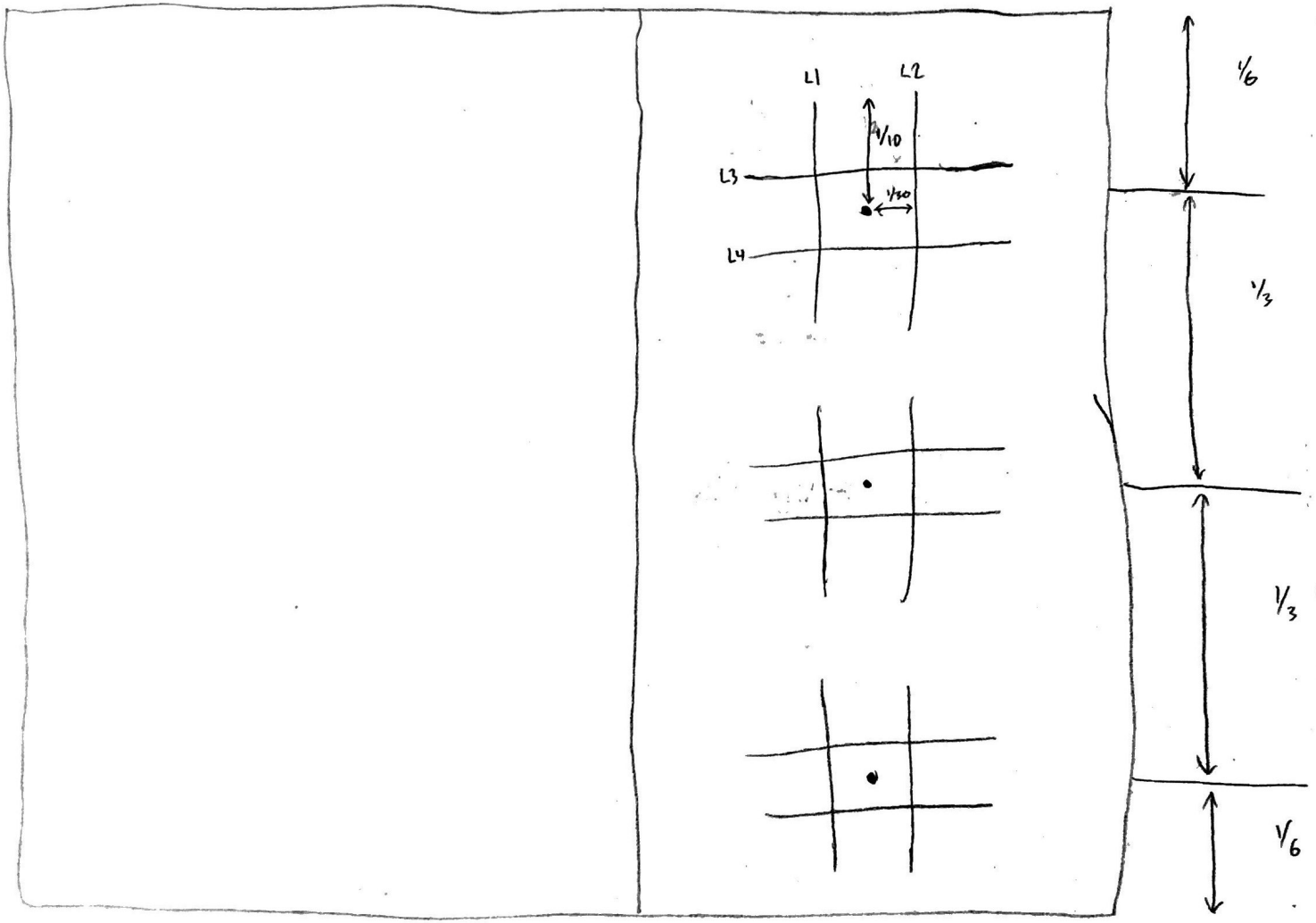
~~Check only middle pieces (all but corners & middle~~

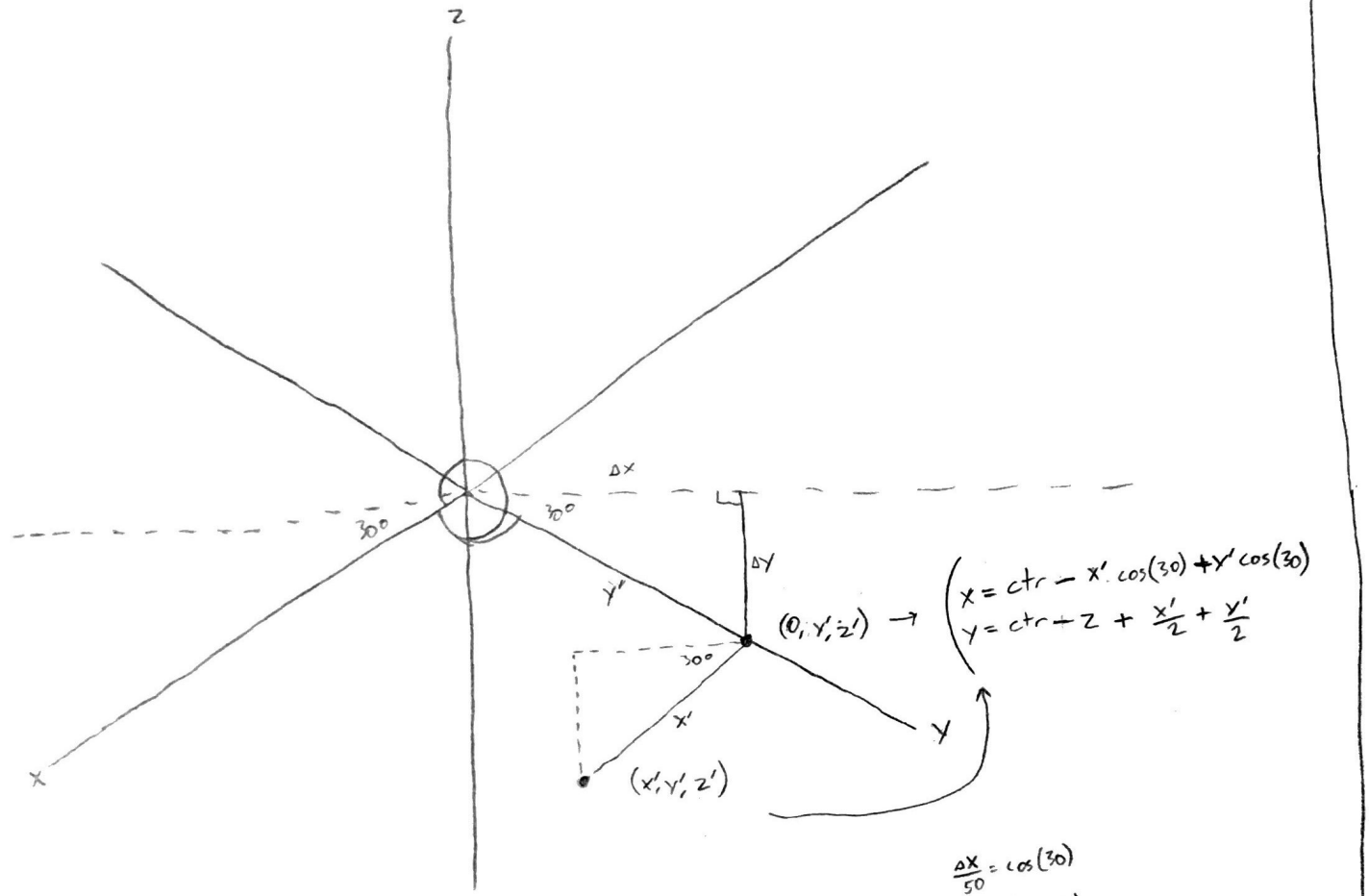
X's indicate all positions needed to check for a win



← Only check in plane for grid=1

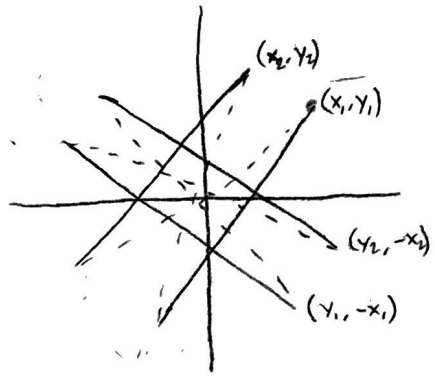



L1
L2
L3
L4
1/10
1/50
1/6
1/3
1/3
1/6



$\frac{\Delta x}{50} = \cos(30)$

$\Delta x = 50\cos(30)$



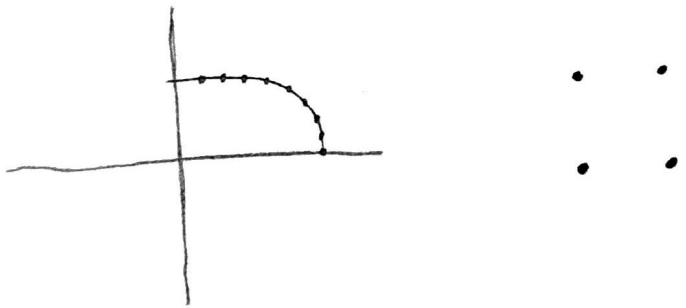
z

1 Left [(x1, y1) ↔ (−x2, −y2)
(−x1, −y1) ↔ (x2, y2)]

−z

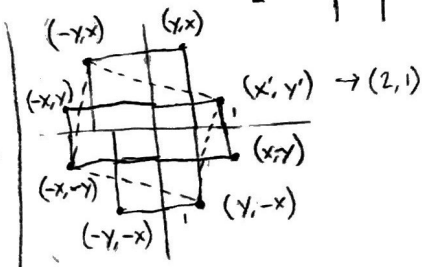
Repeat

1 Right [(y1, −x1) ↔ (−y2, x2)
(−y1, x1) ↔ (y2, −x2)]



(−y, x) (x, y)

(−x, −y) (y, −x)



cubeSide/3 [(0,0)] cubeSide