

Counterbalanced Order Explanation

IGT Koop & Johnson 2011

Order 1

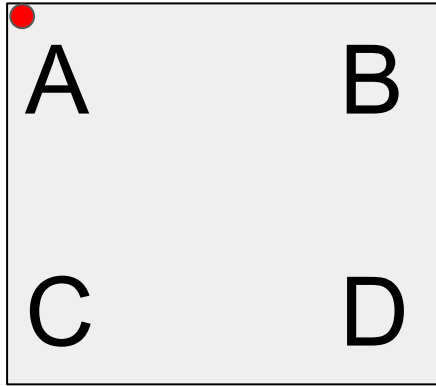
MATLAB: order1transform.mat

Order #1
Participant #13

<div>Deck 1</div> <div>-,+</div> <div>A Trial:9 x=54 y=97</div>	<div>Deck 2</div> <div>+,+</div> <div>B Trial:28 x=554 y=117</div>
<div>Deck 3</div> <div>-,-</div> <div>C Trial:12 x=73 y=377</div>	<div>Deck 4</div> <div>+,-</div> <div>D Trial:31 x=588 y=394</div>

Transforming Order #1

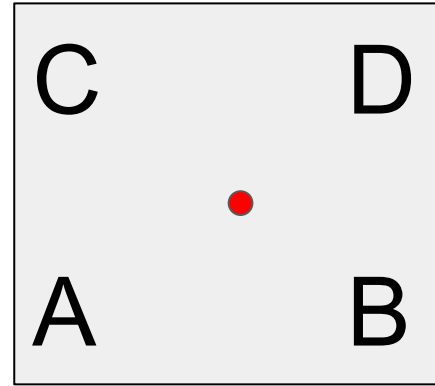
Assuming a typical screen resolution of
640X480



Original



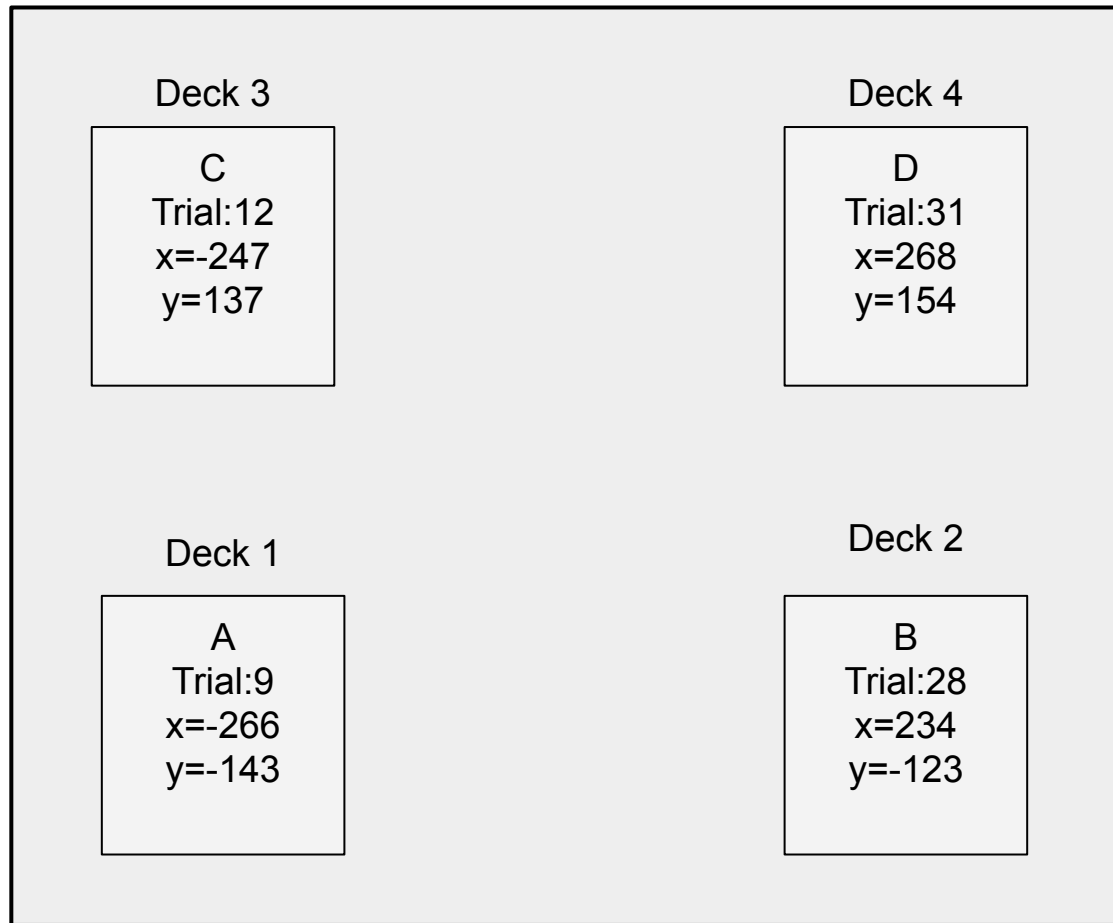
STEP 1



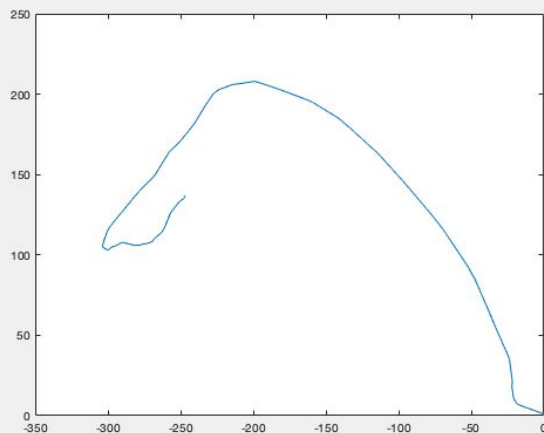
Center the origin

- Subtract 320 from all X coordinates
- Subtract 240 from all Y coordinates

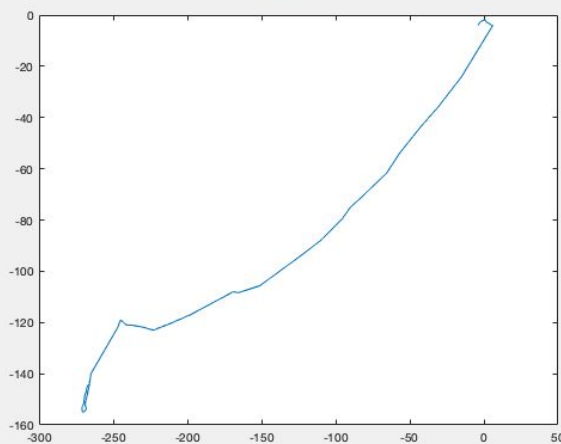
Order #1
Participant #13



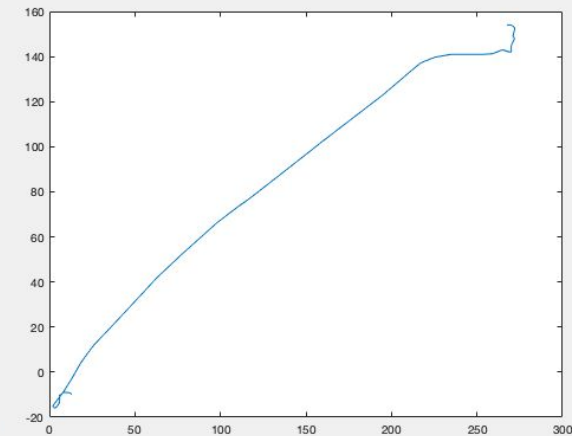
C
Trial:12
x=-247
y=137



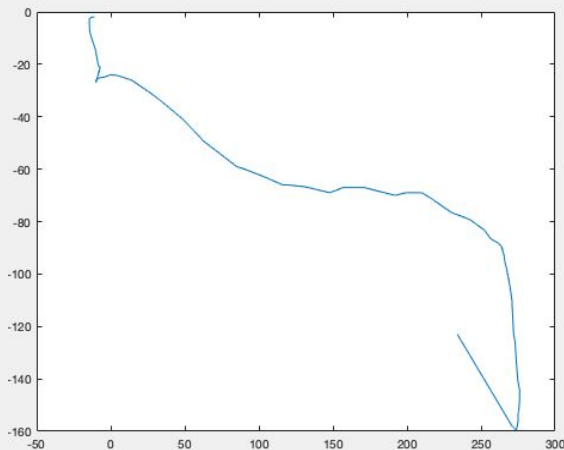
A
Trial:9
x=-266
y=-143



D
Trial:31
x=268
y=154



B
Trial:28
x=234
y=-123



Order 2

MATLAB: `order2transform.mat`

Order #2
Participant #19

Deck 1

D
Trial:32
x=71
y=98

Deck 2

C
Trial:8
x=576
y=91

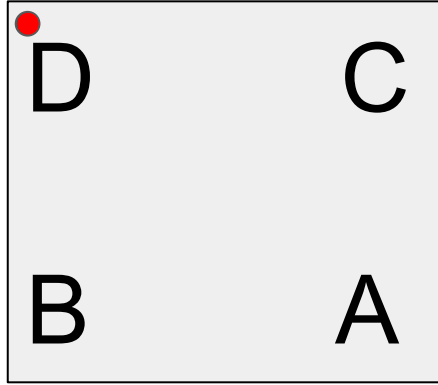
Deck 3

B
Trial:23
x=39
y=384

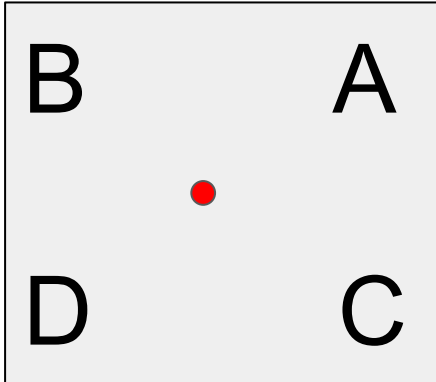
Deck 4

A
Trial:9
x=571
y=356

Transforming Order #2



Original



STEP 1

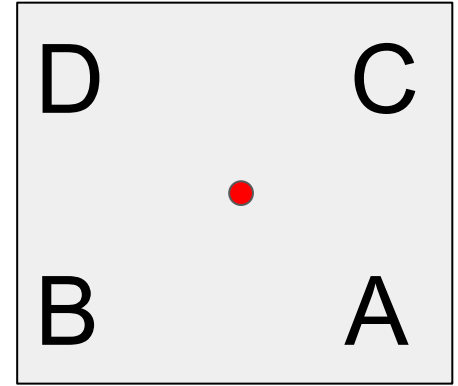
Center the origin

- Subtract 320 from all X coordinates
- Subtract 240 from all Y coordinates

STEP 2

Flip over x-axis

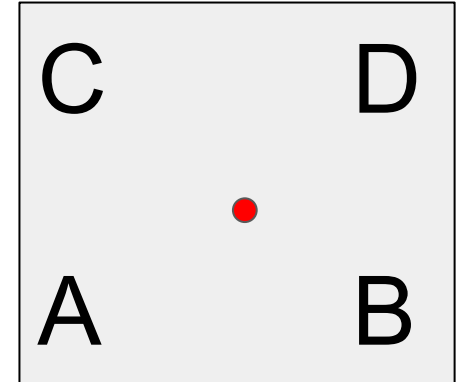
- Change the sign of all x-coordinates



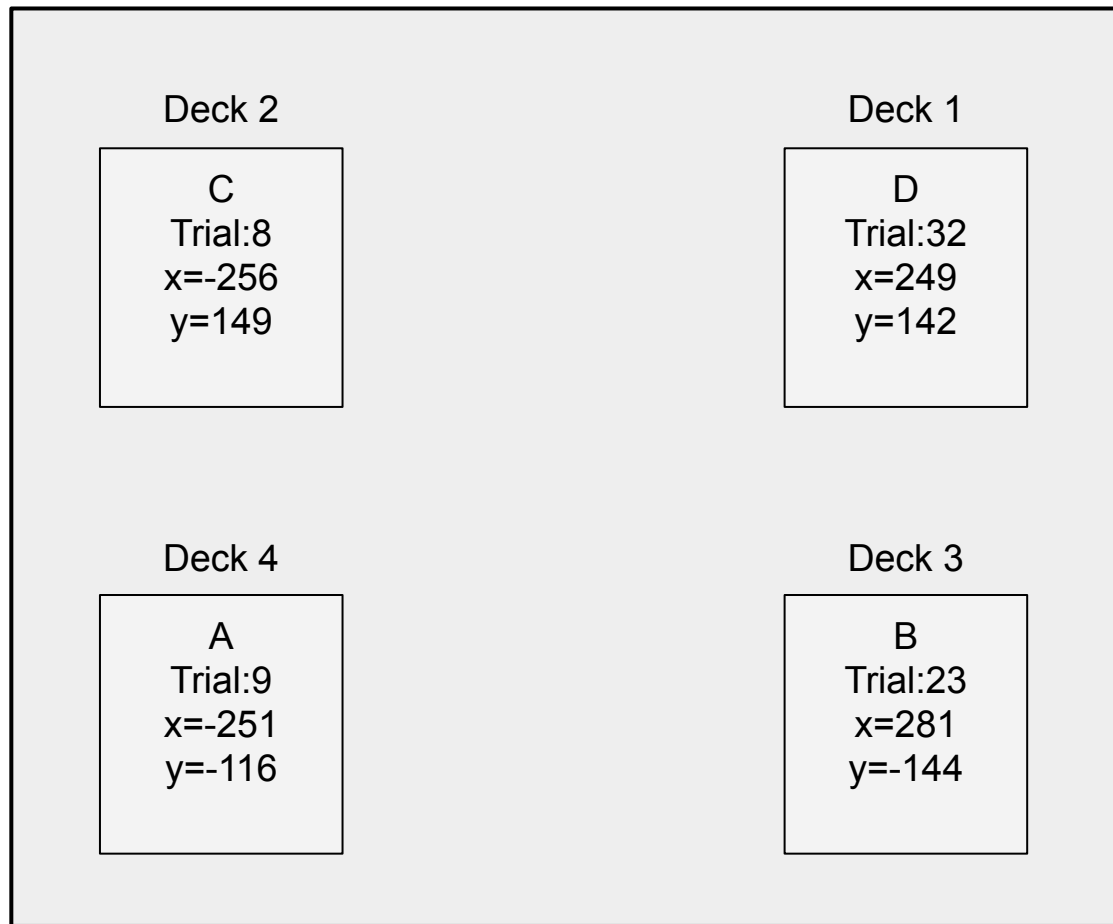
STEP 3

Flip over y-axis

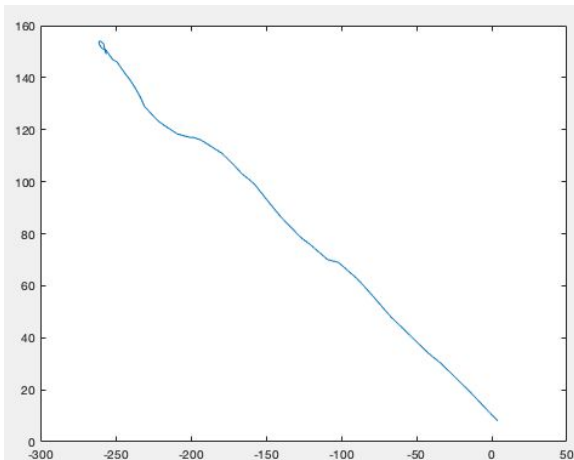
- Change the sign of all y-coordinates



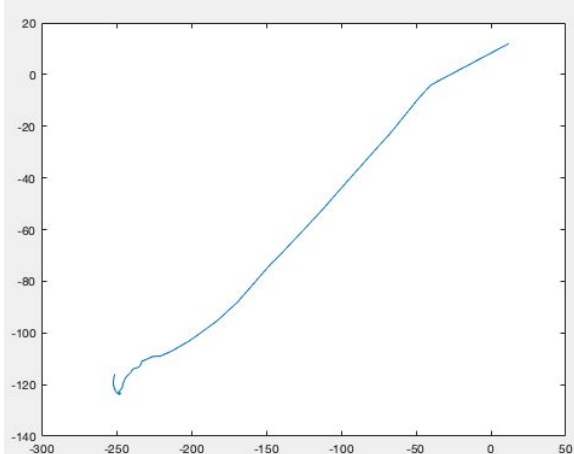
Order #2
Participant #19



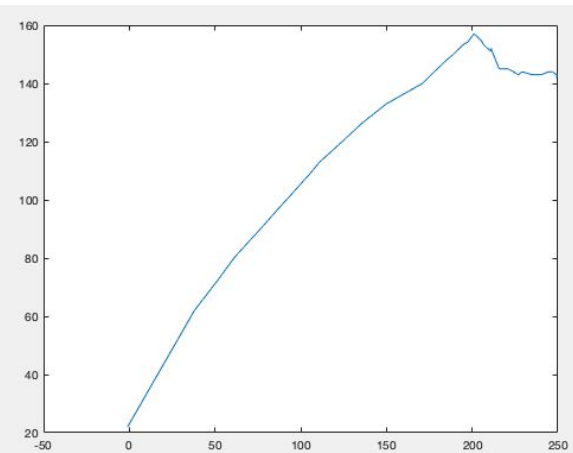
C
Trial:8
x=-256
y=149



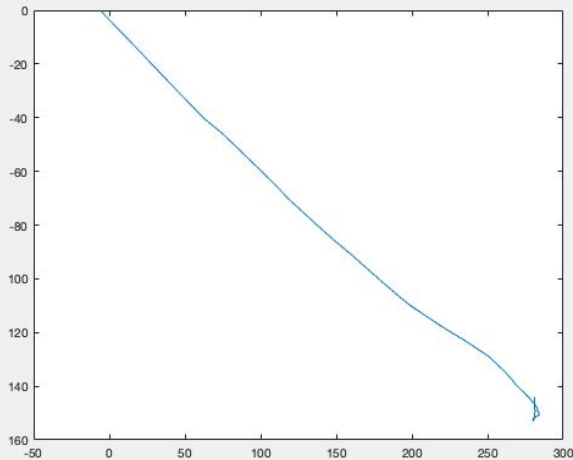
A
Trial:9
x=-251
y=-116



D
Trial:32
x=249
y=142



B
Trial:23
x=281
y=-144



Order 3

MATLAB: `order3transform.mat`

Order #3
Participant #24

Deck 1

B
Trial:19
x=52
y=70

Deck 2

A
Trial:9
x=561
y=70

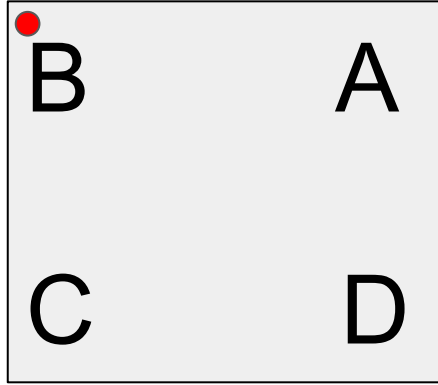
Deck 3

C
Trial:21
x=85
y=357

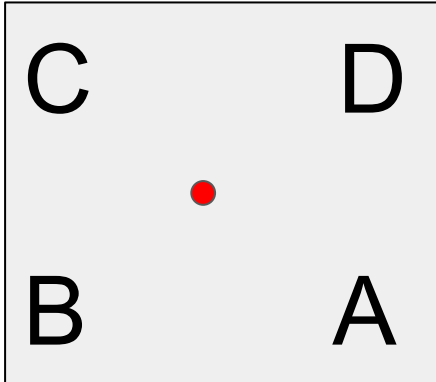
Deck 4

D
Trial:38
x=556
y=383

Transforming Order #3



Original



STEP 1

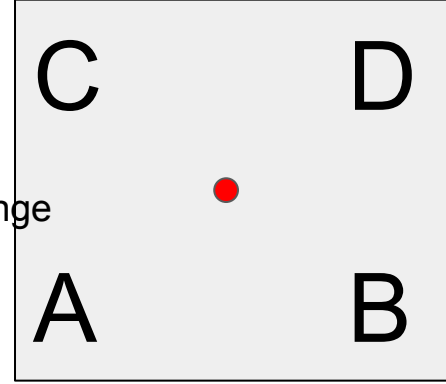
Center the origin

- Subtract 320 from all X coordinates
- Subtract 240 from all Y coordinates

STEP 2

Flip A and B

- If y-coordinate < 0 change the sign of the x-coordinate



Order #3
Participant #24

Deck 3

C
Trial:21
x=-235
y=117

Deck 4

D
Trial:38
x=236
y=143

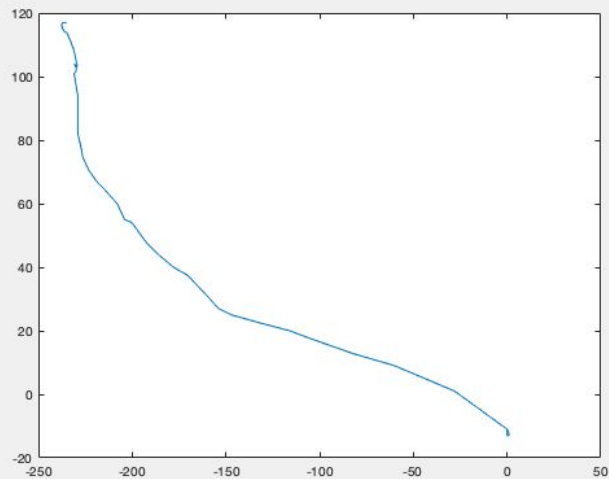
Deck 2

A
Trial:9
x=-241
y=-170

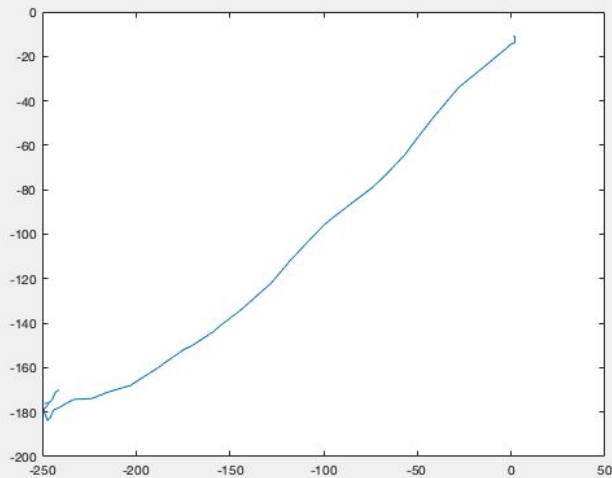
Deck 1

B
Trial:19
x=268
y=-170

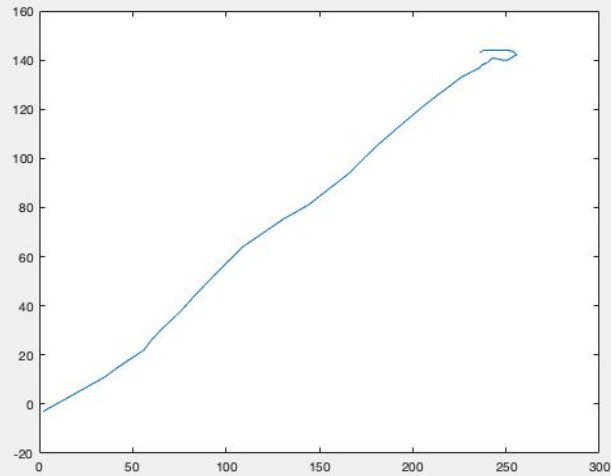
C
Trial:21
x=-235
y=117



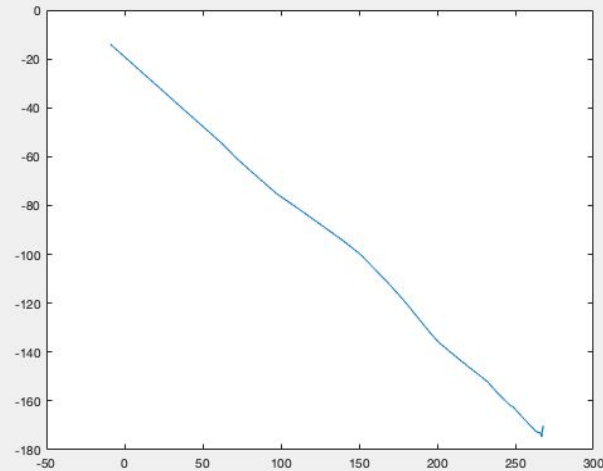
A
Trial:9
x=-241
y=-170



D
Trial:38
x=236
y=143



B
Trial:19
x=268
y=-170



Order 4

MATLAB: `order4transform.mat`

Order #4
Participant #25

Deck 1

C
Trial:20
x=55
y=76

Deck 2

D
Trial:40
x=553
y=118

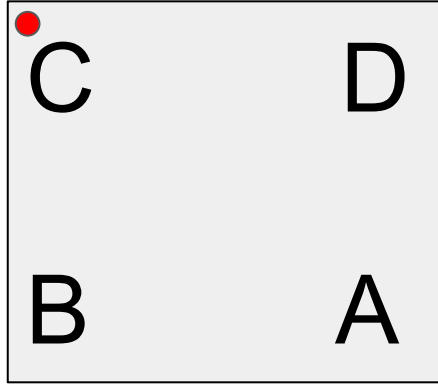
Deck 3

B
Trial:16
x=59
y=385

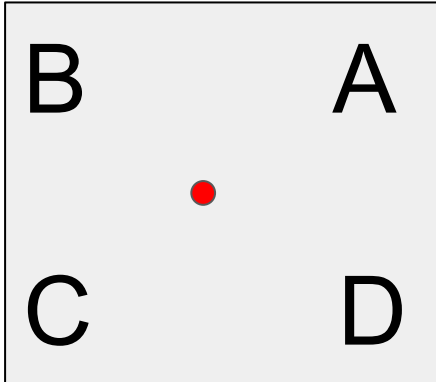
Deck 4

A
Trial:11
x=567
y=391

Transforming Order #4



Original



STEP 1

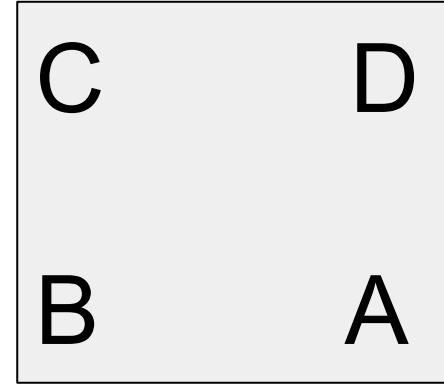
Center the origin

- Subtract 320 from all X coordinates
- Subtract 240 from all Y coordinates

STEP 2

Flip over x-axis

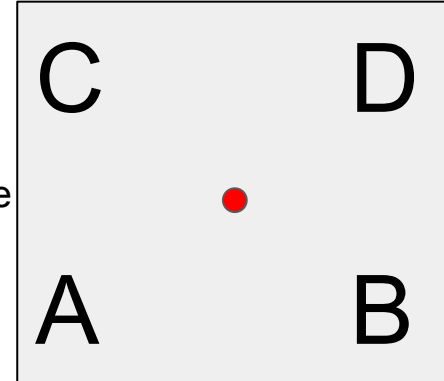
- Change the sign of all y-coordinates



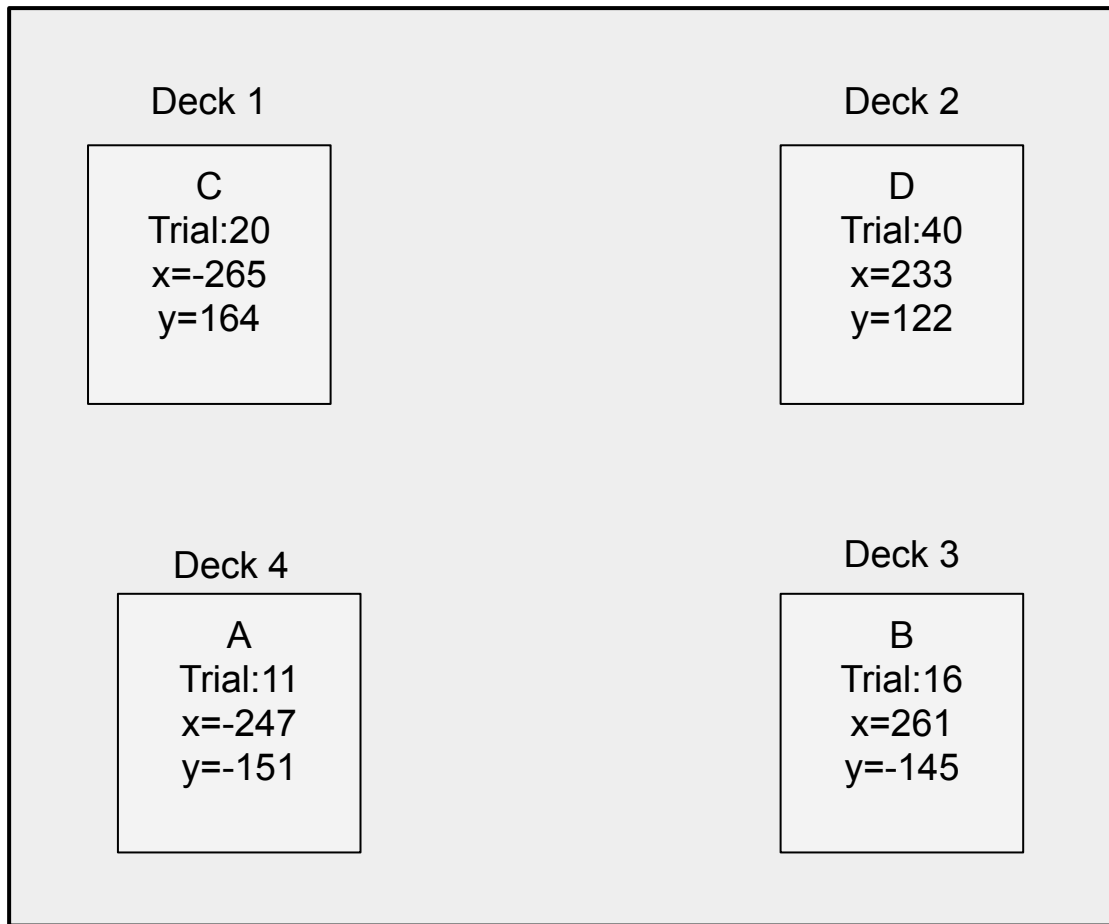
STEP 3

Flip A and B

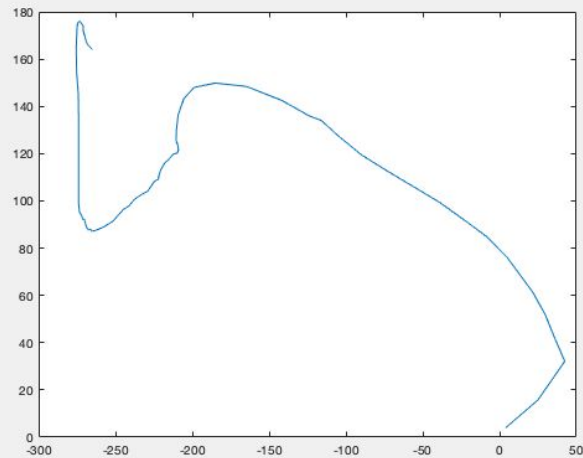
- If y-coordinate < 0 change the sign of the x-coordinate



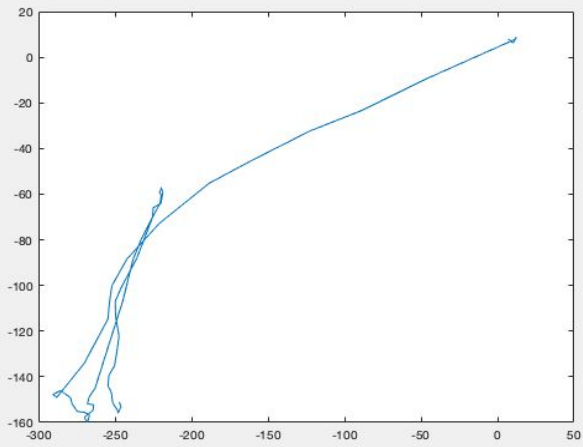
Order #4
Participant #25



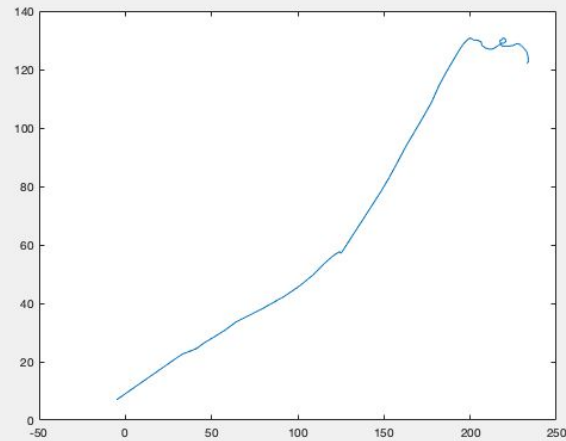
C
Trial:20
 $x=-265$
 $y=164$



A
Trial:11
 $x=-247$
 $y=-151$



D
Trial:40
 $x=233$
 $y=122$



B
Trial:16
 $x=261$
 $y=-145$

