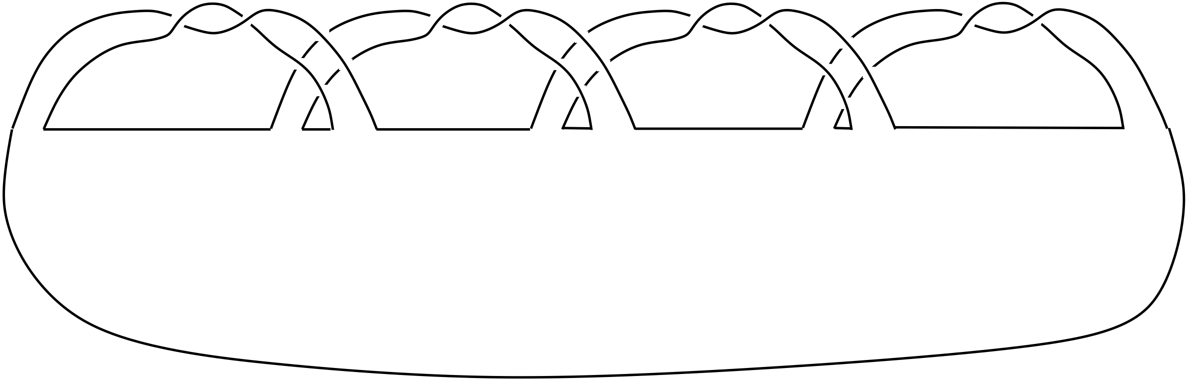
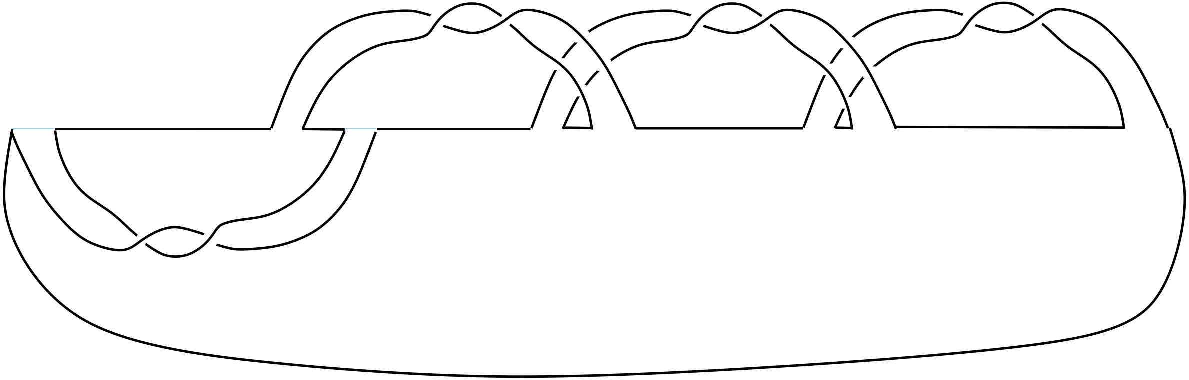
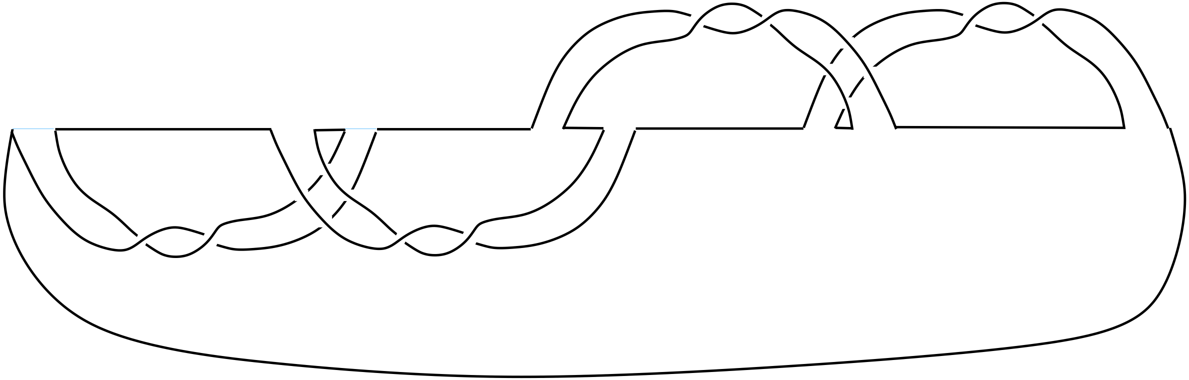
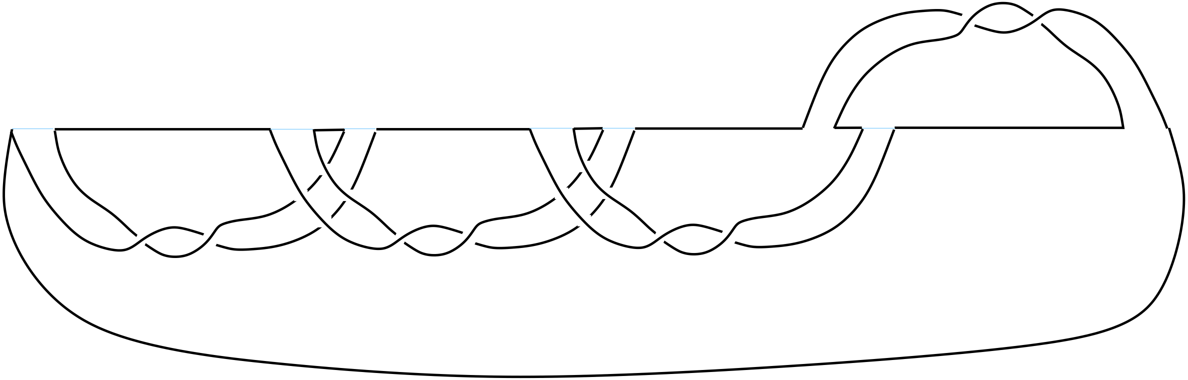
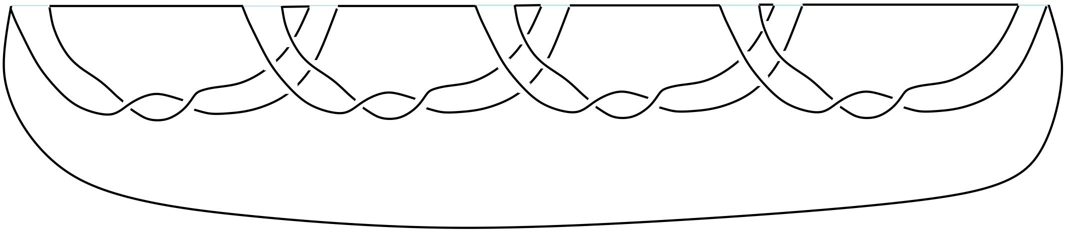


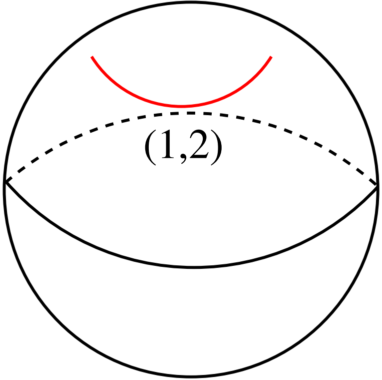




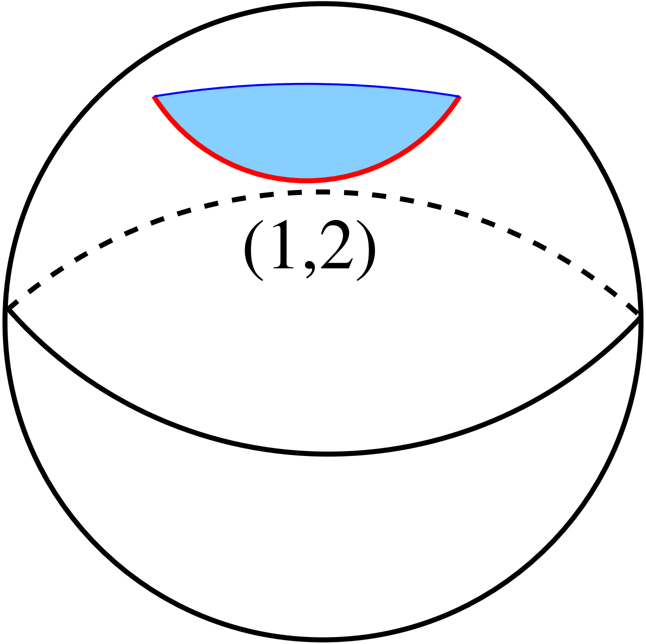


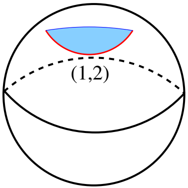


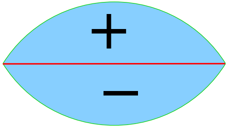
¡Bolas!



Una 3-bola B con
un arco $\alpha \subset B$ propiamente encajado y
una permutación $(1,2) \in S_n$.


(1,2)


(1,2)


+
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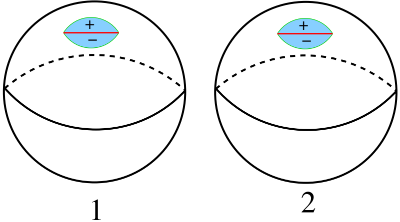
+
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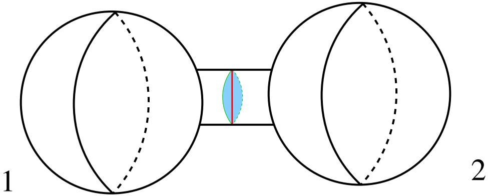
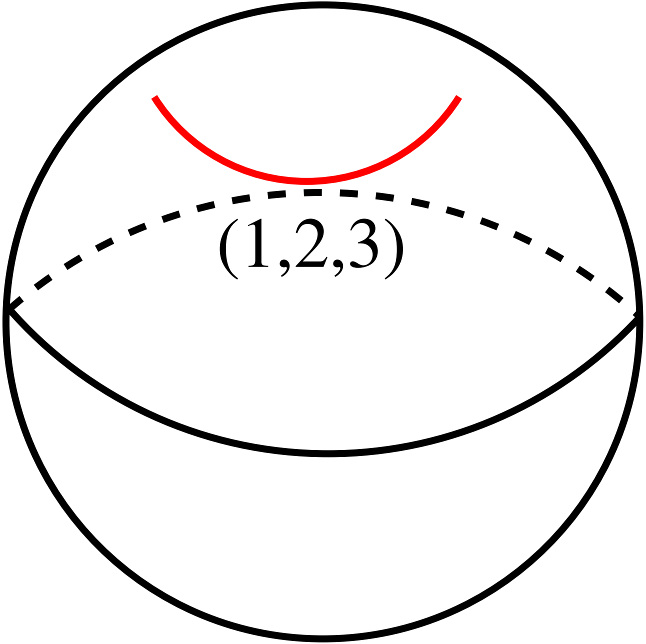
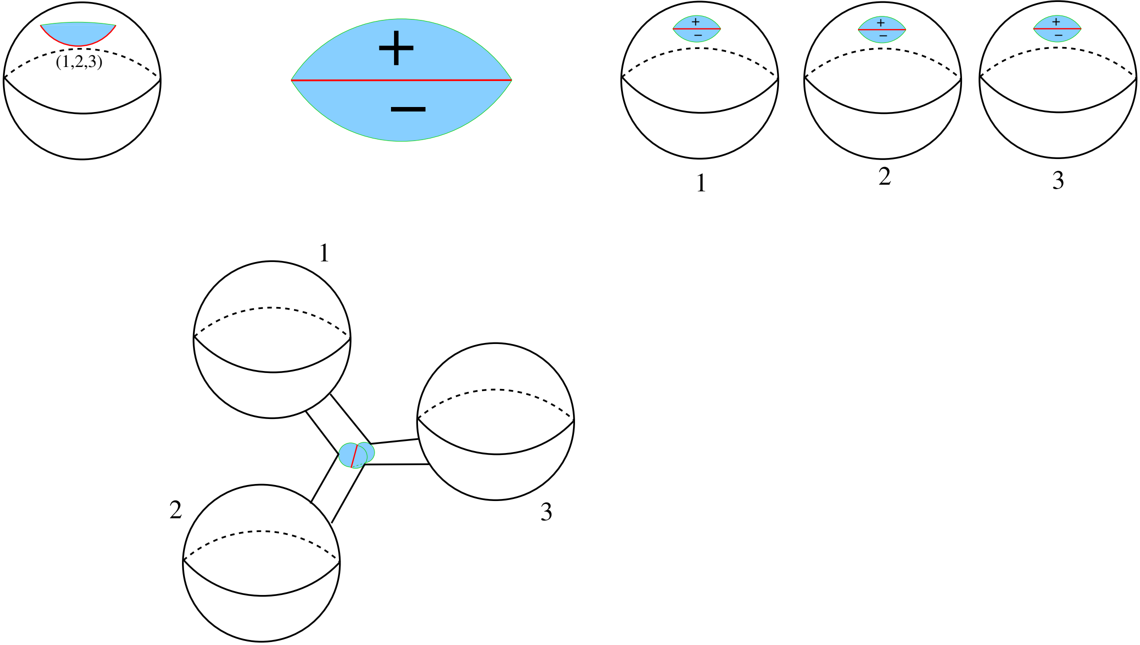
1
2


1
2


(1,2,3)



(1,2,3)
+
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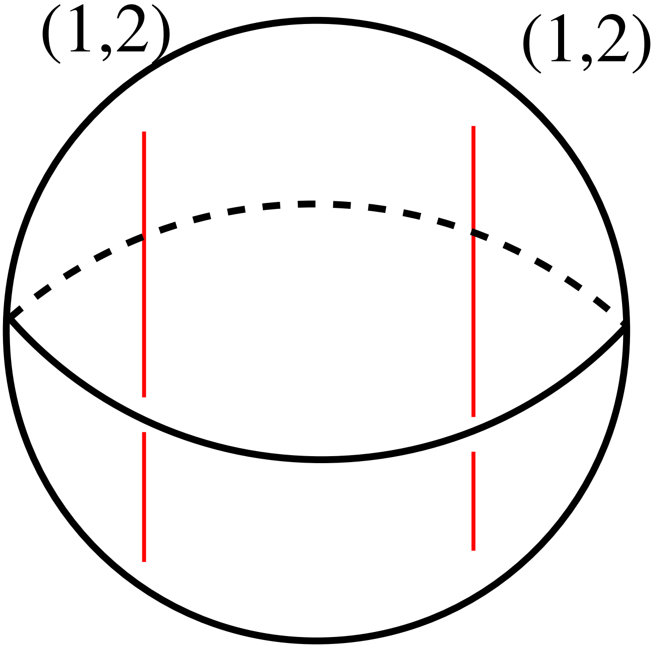
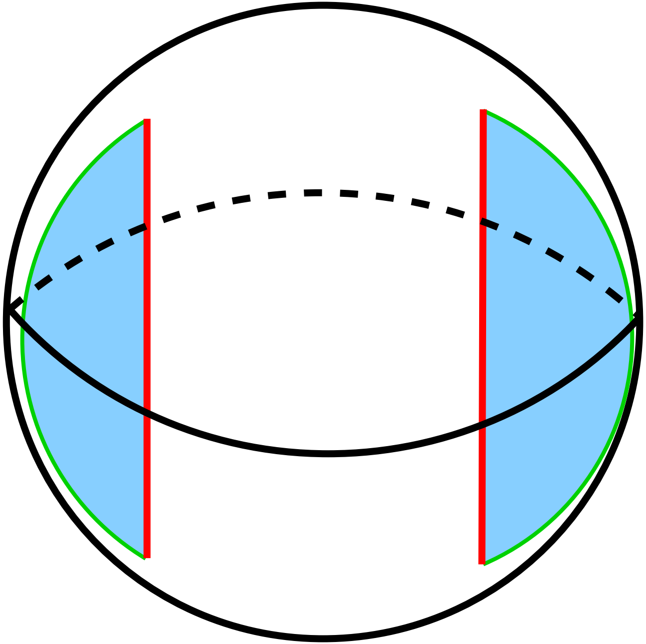
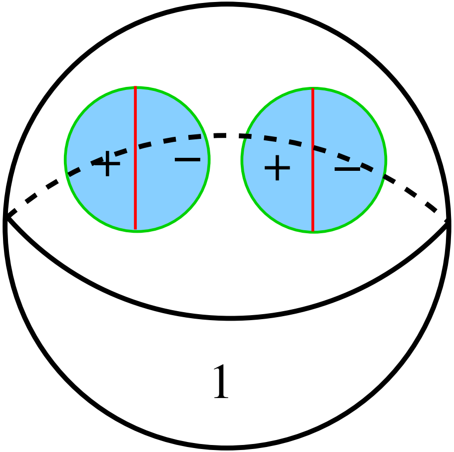
1
2
3
1
2
3


(1,2)
(1,2)





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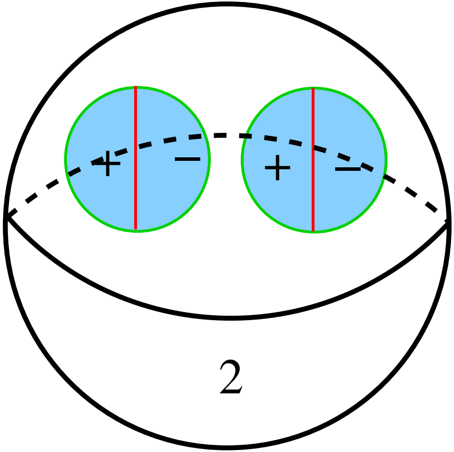

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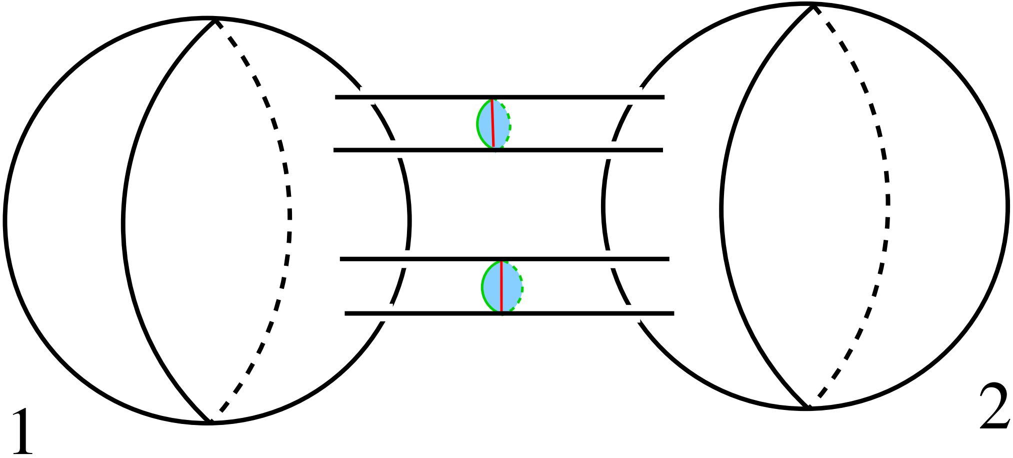
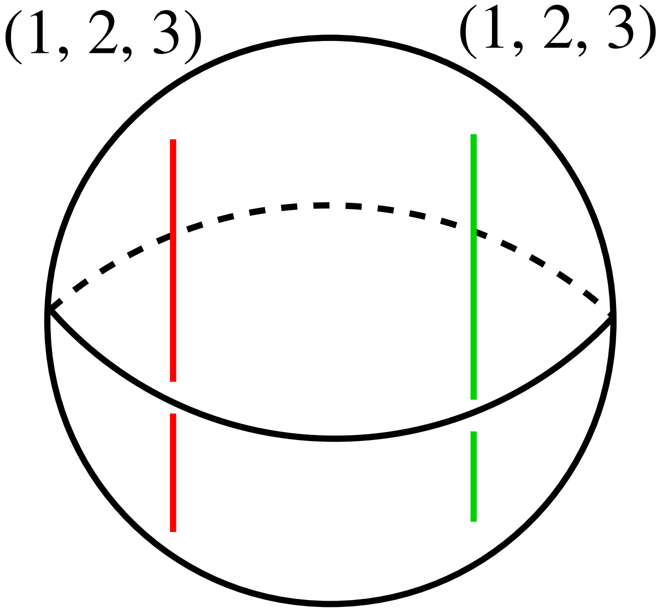
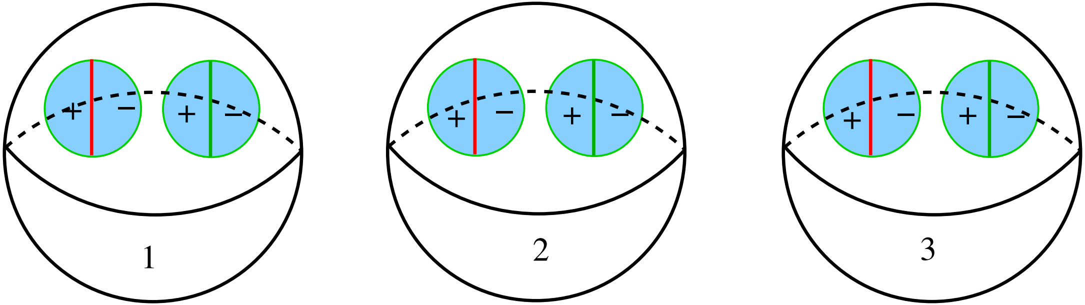

1
2


(1, 2, 3)
(1, 2, 3)


+
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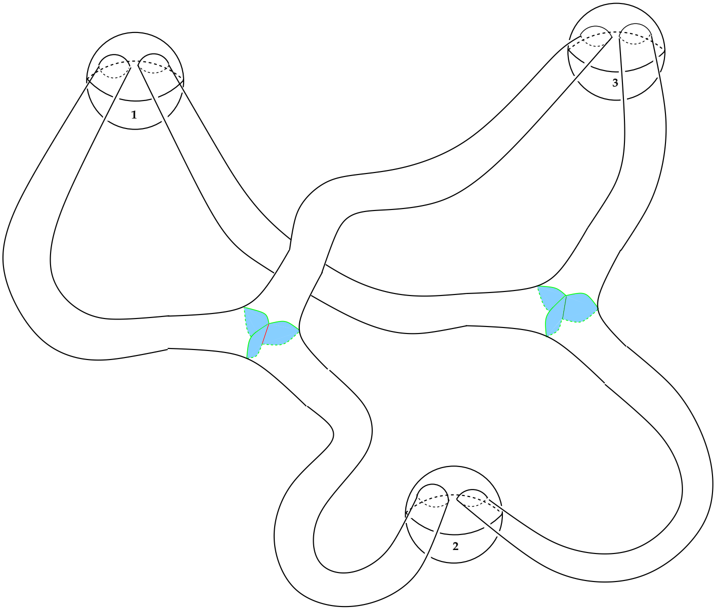
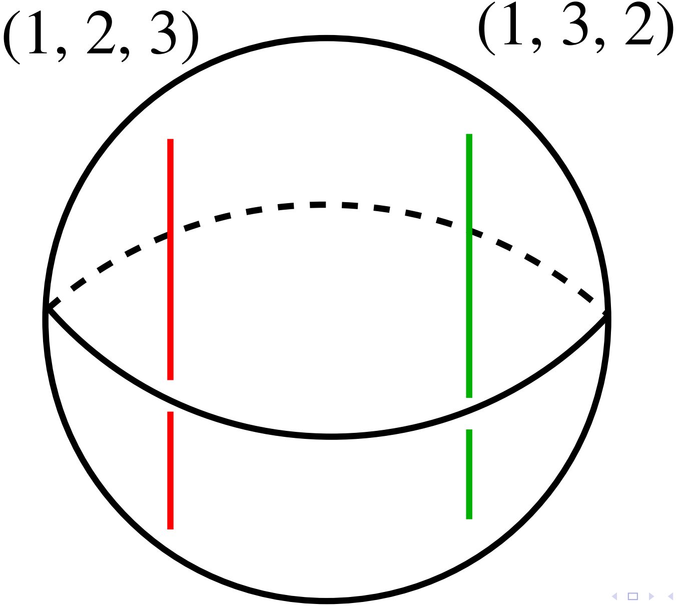
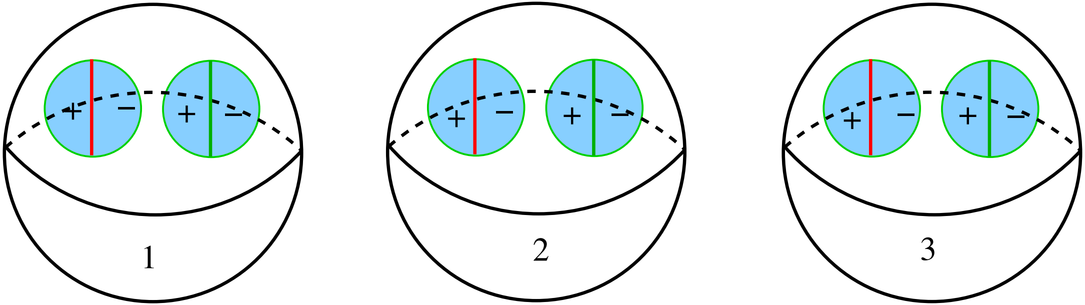


1
3
2


(1, 2, 3)
(1, 3, 2)



+
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+
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+
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+
−
2
+
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+
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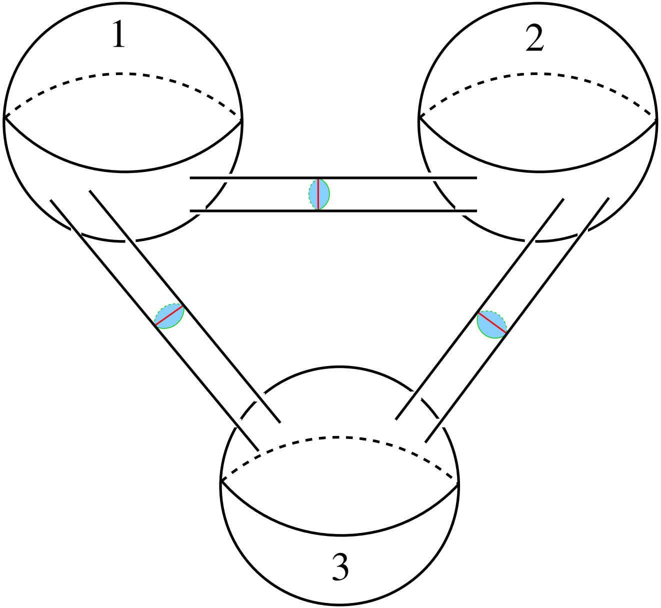
3


1
2
3

Se obtuvo una función $\varphi : M \to N$ que es

- continua,
- abierta y
- propia.

Para cada $x \in N$ el número $\#\varphi^{-1}(x) = n$ está fijo, excepto para los puntos de un subconjunto $K \subset N$ de codimensión 2.

Definición. Una función $\varphi : M^m \to N^m$ se llama una *cubierta ramificada de n hojas* si φ es continua, abierta y propia y si existe una subvariedad $k \subset N$ de codimensión 2 tal que

$$\varphi : M - \varphi^{-1}(k) \to N - k$$

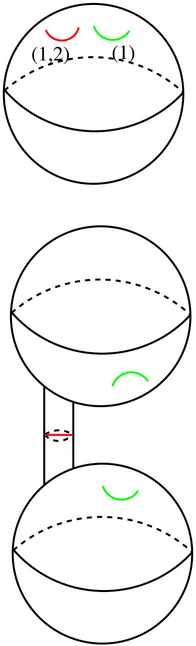
es un espacio cubriente de n hojas.
(k está propiamente encajada en N).
Se dice que φ *está ramificada a lo largo de* k.

Para una cubierta ramificada $\varphi : M \to (N, k)$ de n hojas se tiene una *representación* (un homomorfismo) asociada:

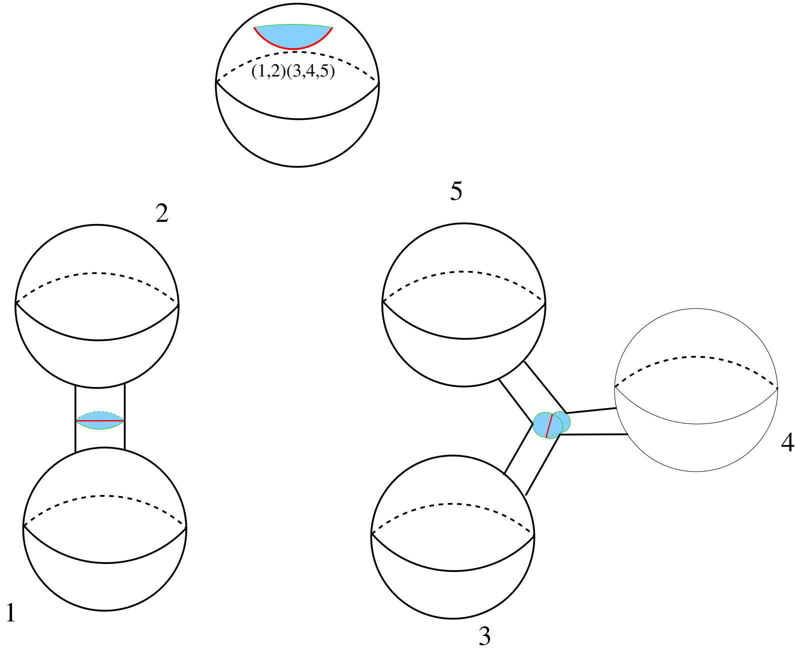
$$\omega_\varphi : \pi_1(N - k) \to S_n.$$

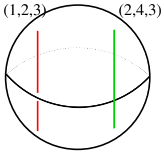
Para una representación $\omega : \pi_1(N - k) \to S_n$ dada se tiene una cubierta ramificada

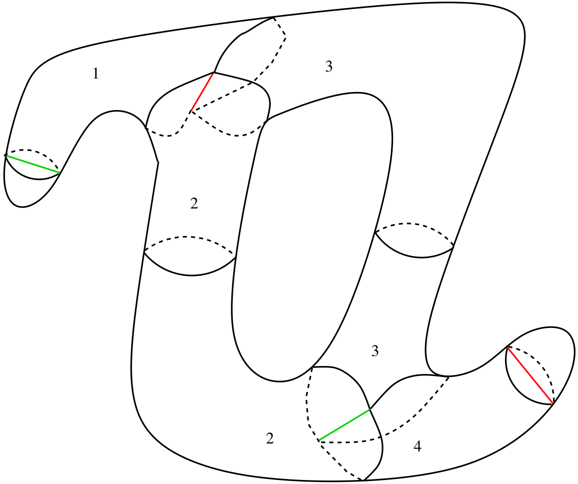
$$\varphi_\omega : M \to (N, k).$$

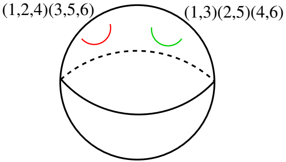


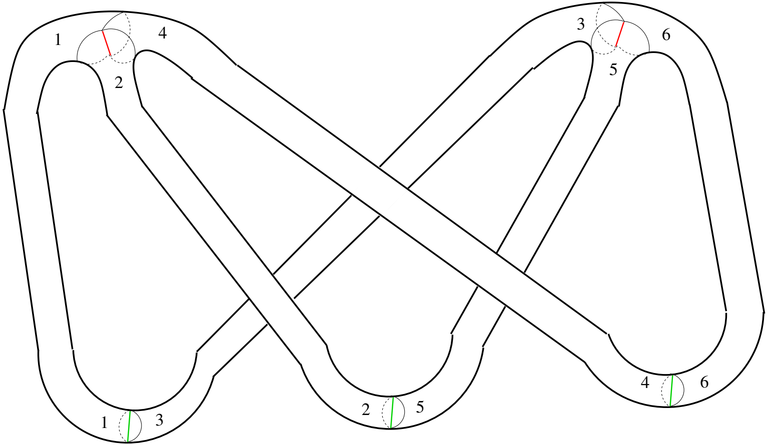
(1)=identity


(1,2)(3,4,5)
2
5
4
1
3

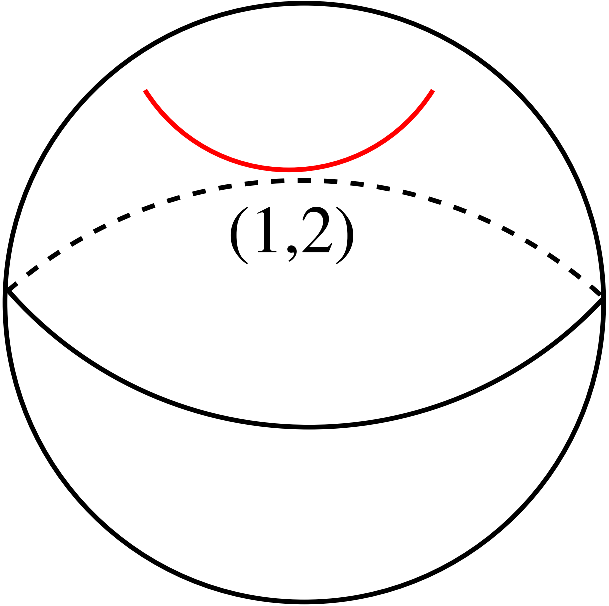

(1,2,3)
(2,4,3)

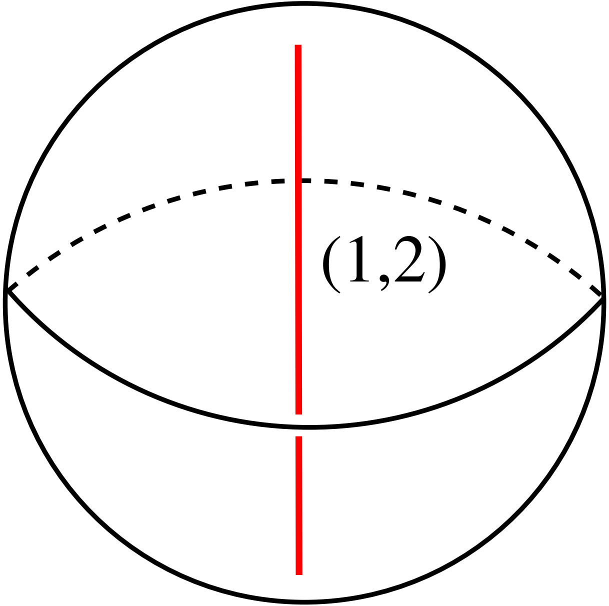

1
3
2
3
2
4

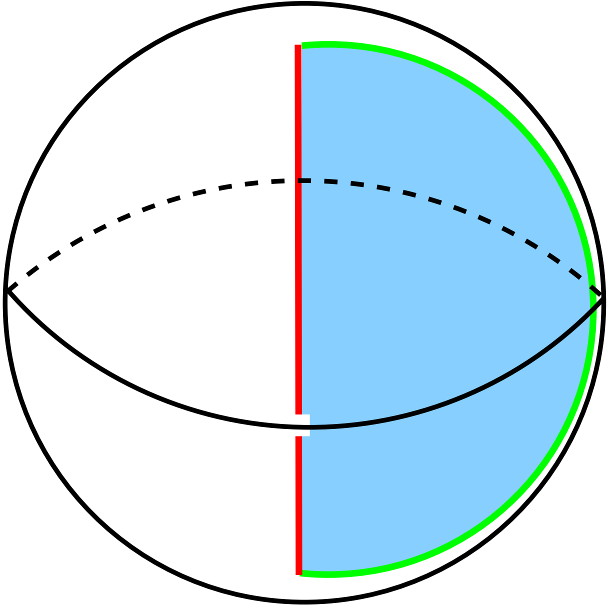

(1,2,4)(3,5,6)
(1,3)(2,5)(4,6)

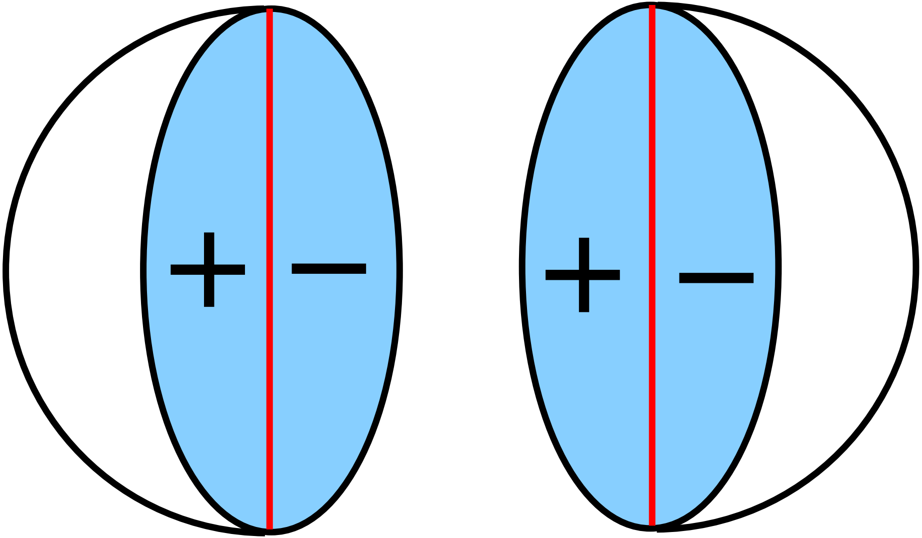

1
4
2
3
6
5
1
3
2
5
4
6

Ejemplos especiales

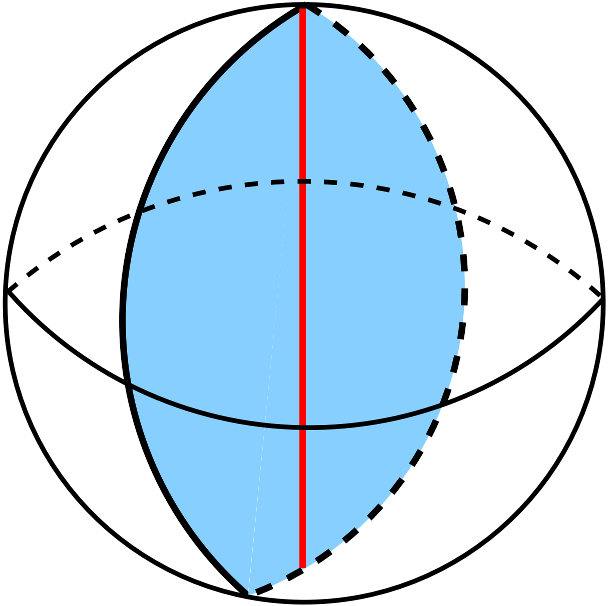

(1,2)

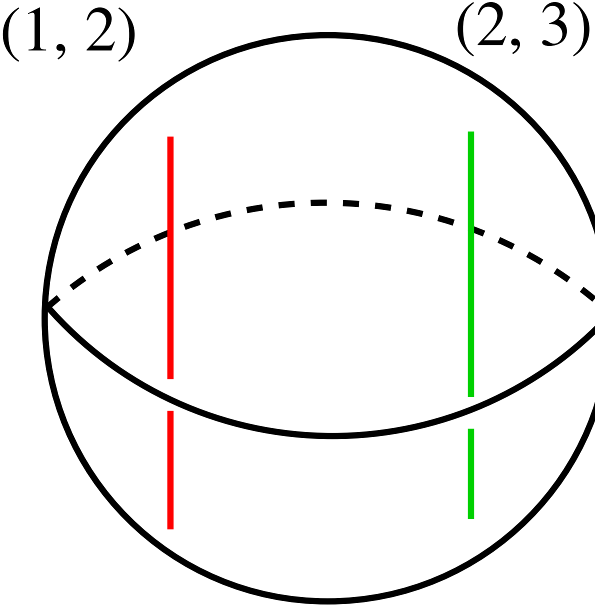

(1,2)

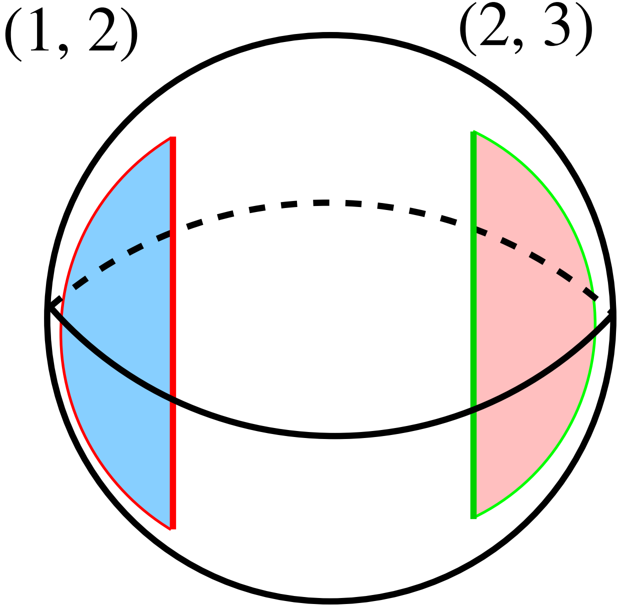


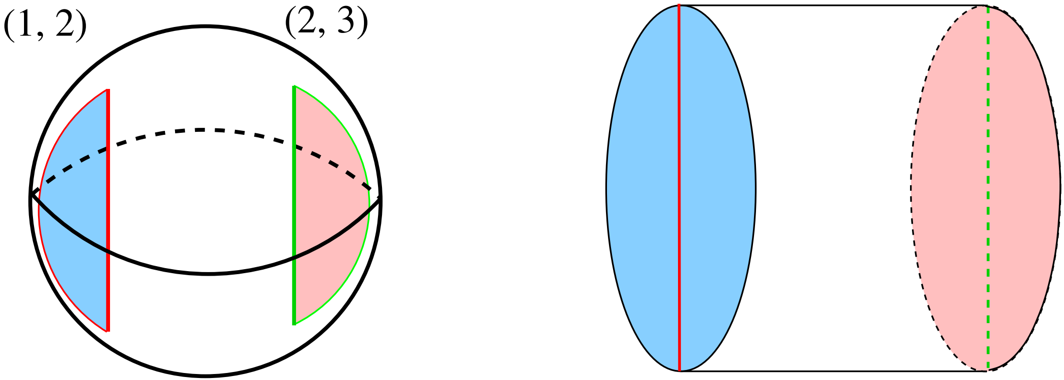


1 2

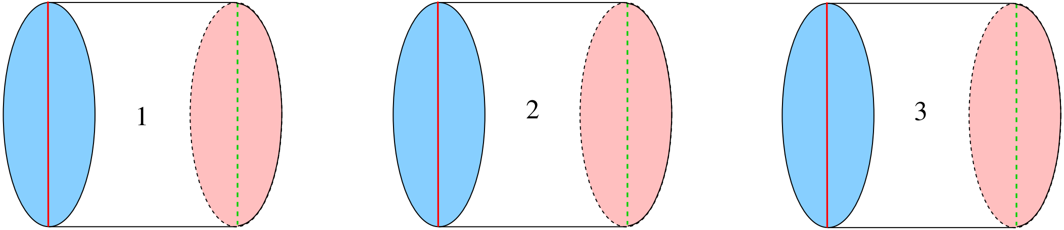



(1, 2)
(2, 3)


(1, 2)
(2, 3)



(1, 2)
(2, 3)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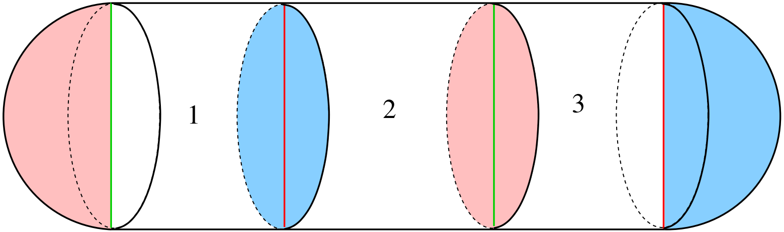
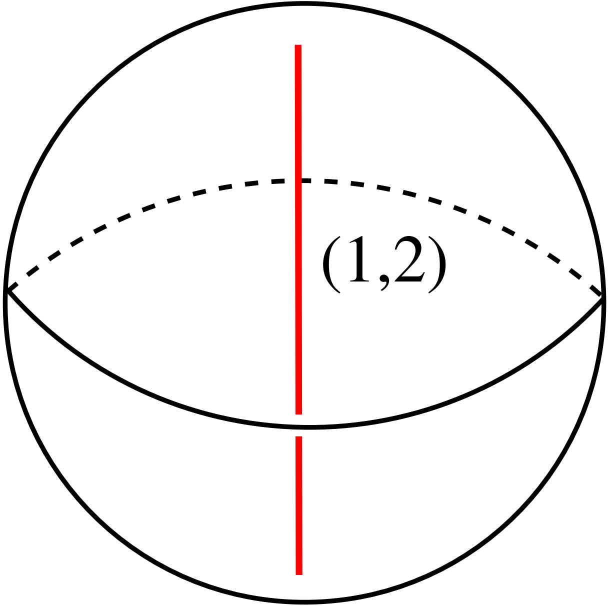

1
2
3

¿Y qué tal si..?

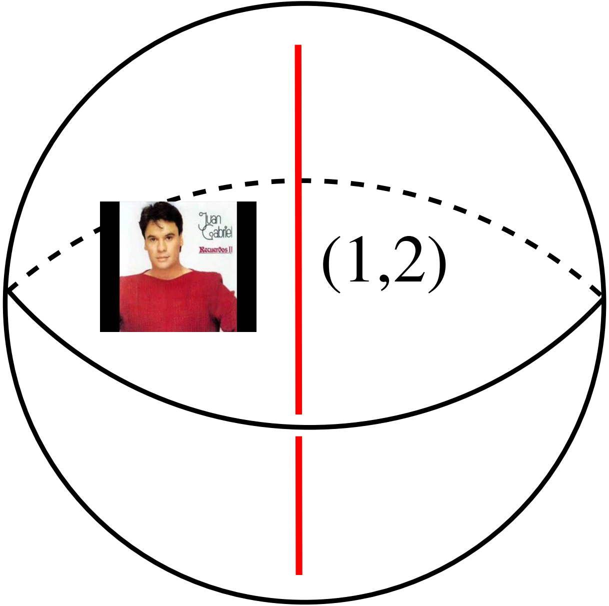

(1,2)

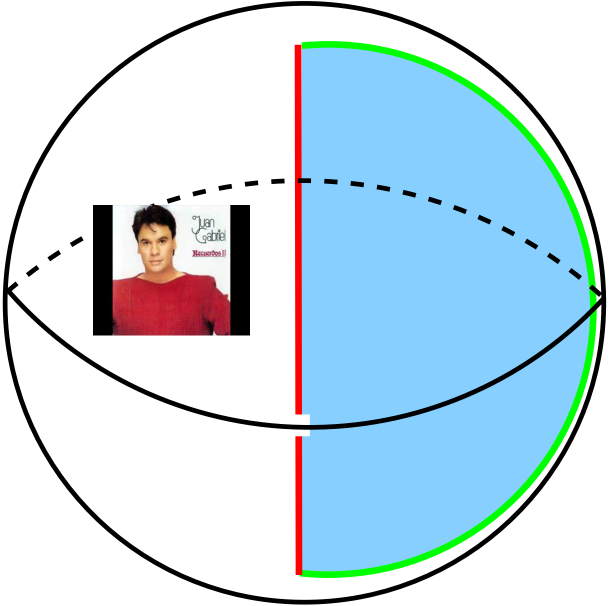
Tómate una figura.

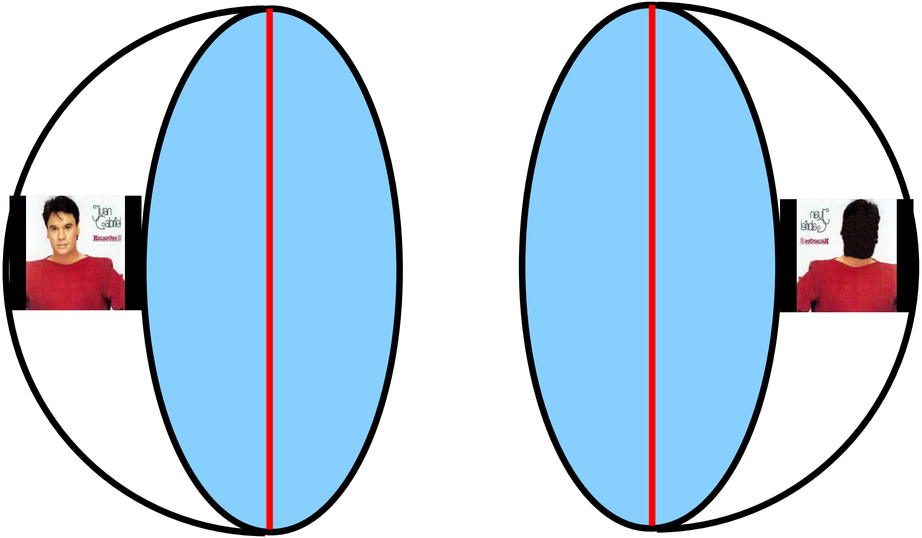
Tómate una figura.

⋮

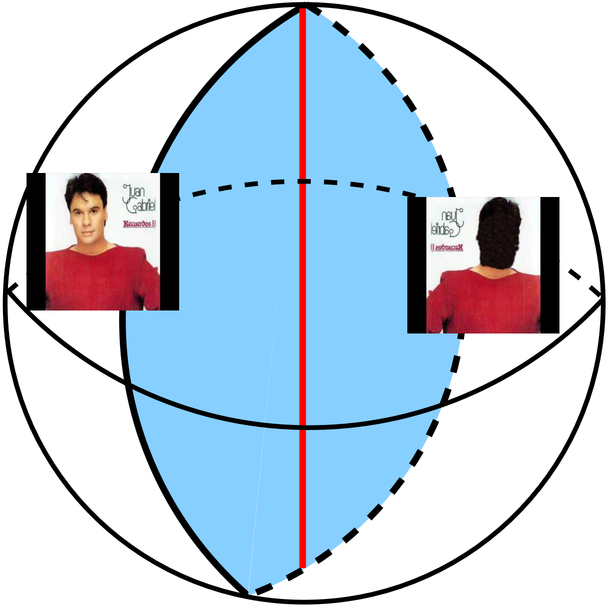
La que quieras.

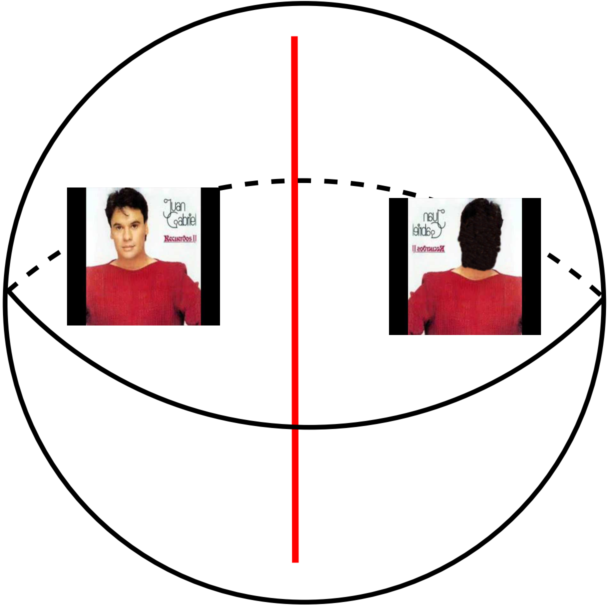

Juan Gabriel
Recuerdos II
(1,2)

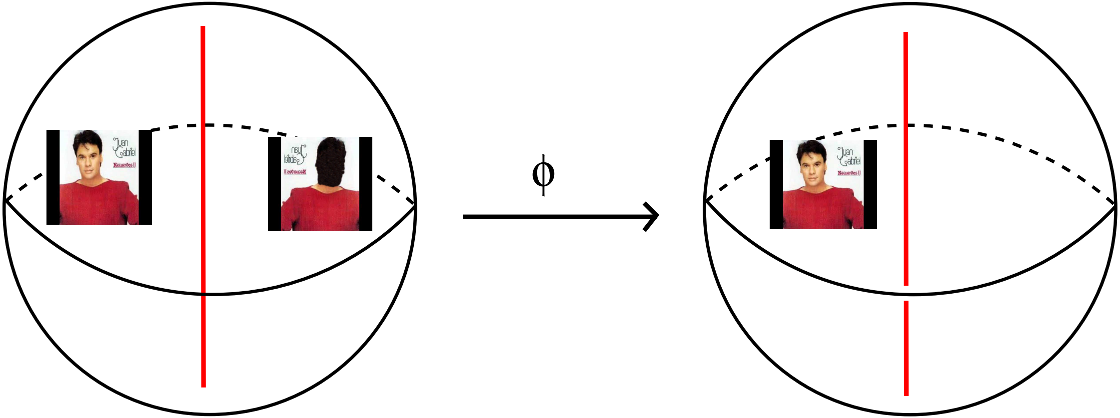

Juan
Gabriel
Recuerdos II

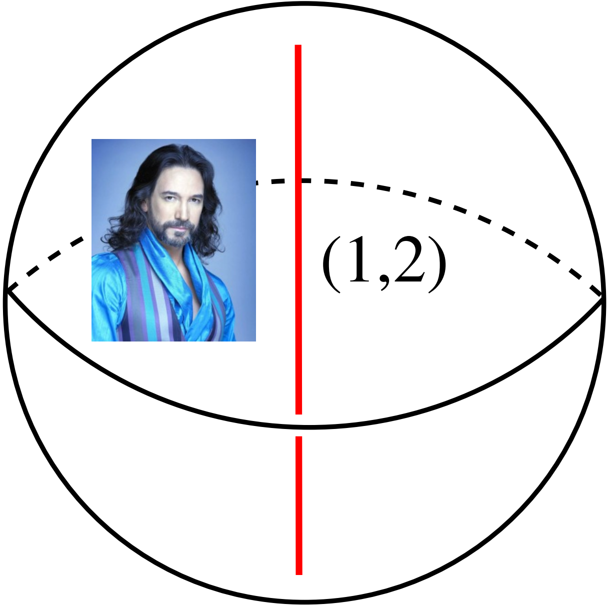


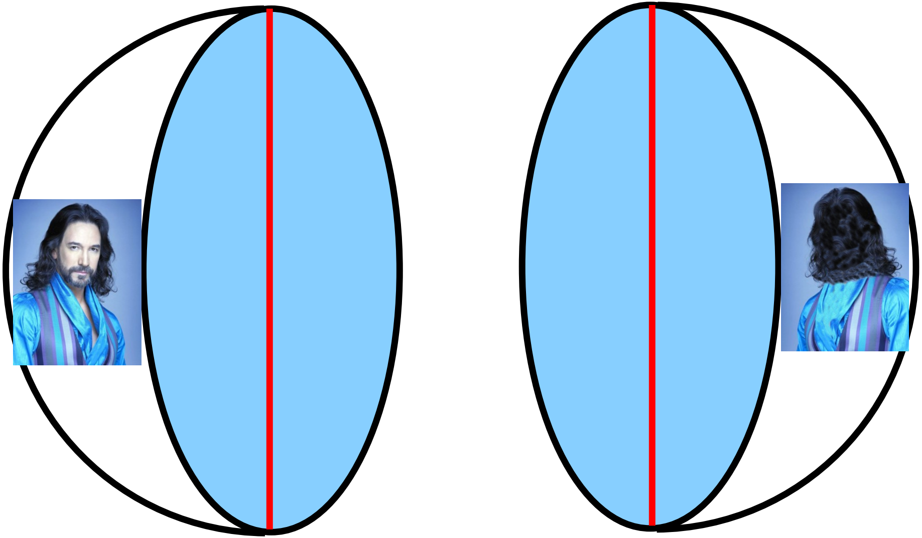
1 2


Juan Gabriel
Recuerdos II


Juan Gabriel
Recuerdos II


ϕ


(1,2)



1

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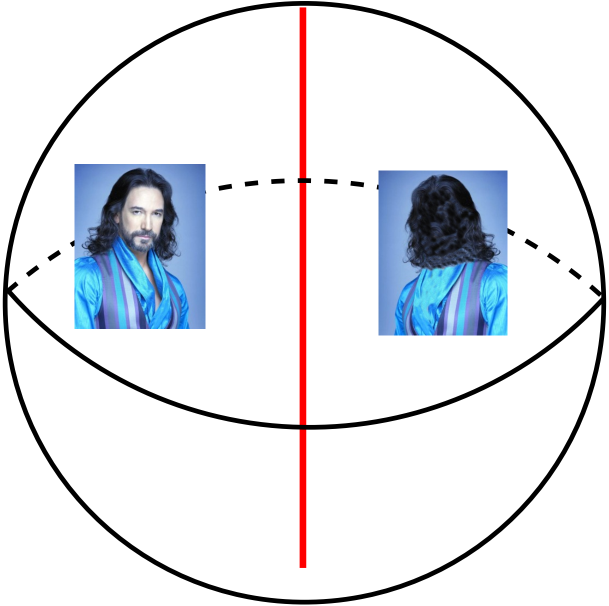
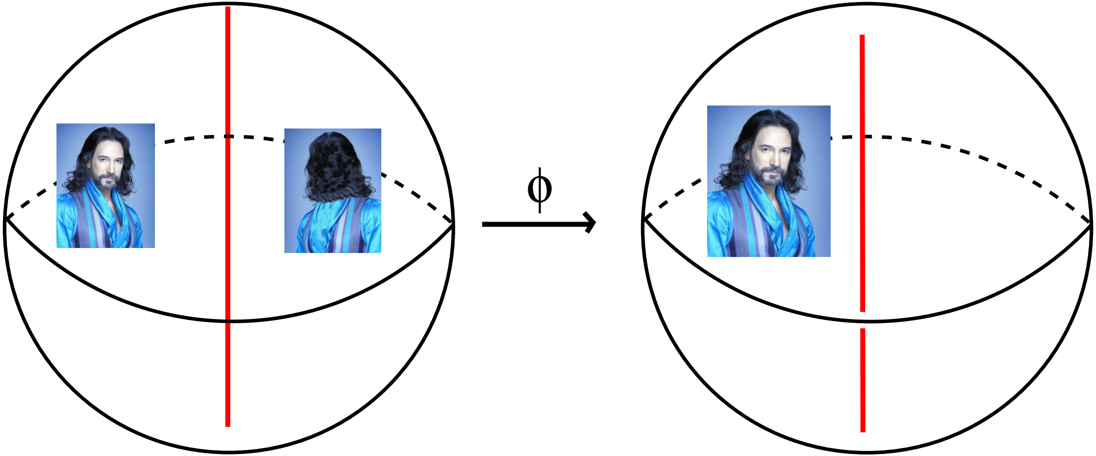
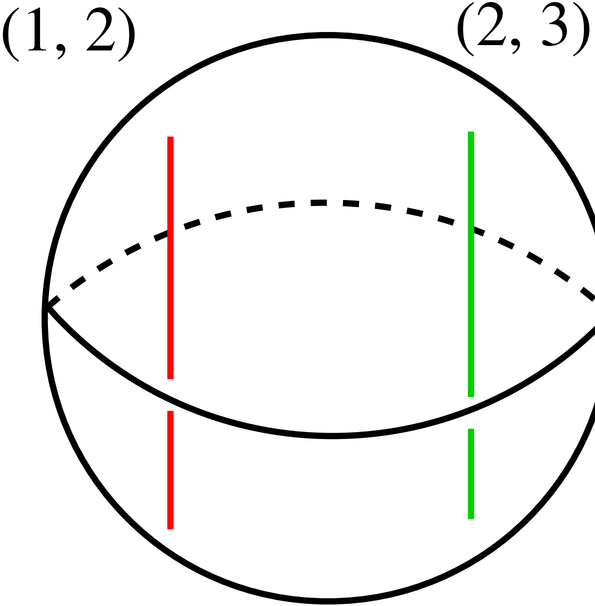
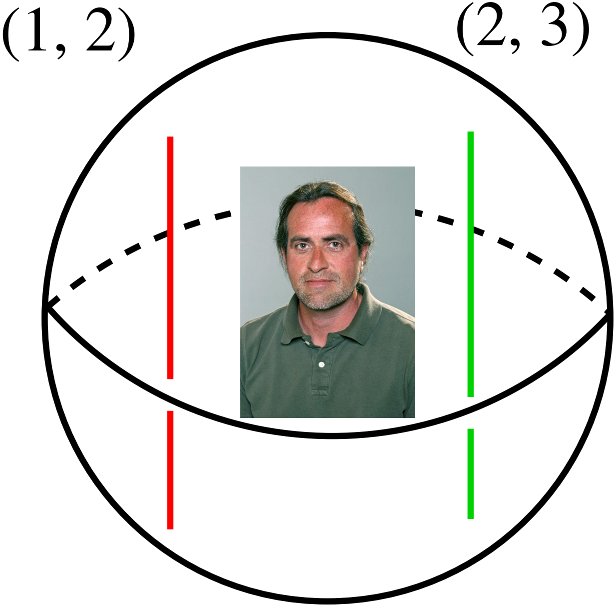
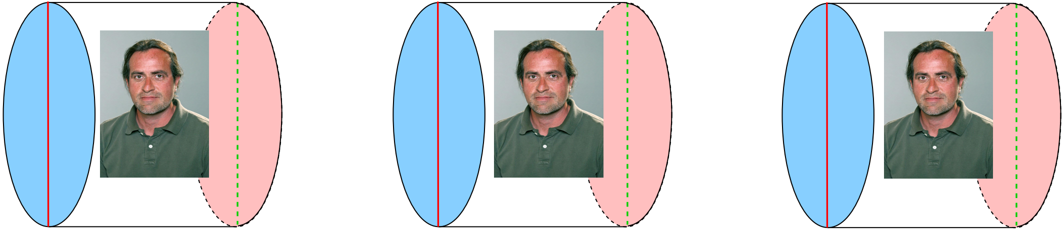
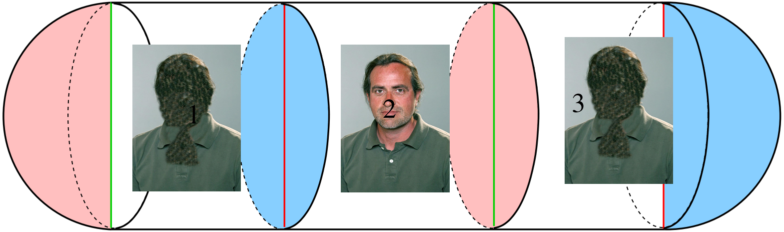





(1, 2)
(2, 3)


(1, 2)
(2, 3)

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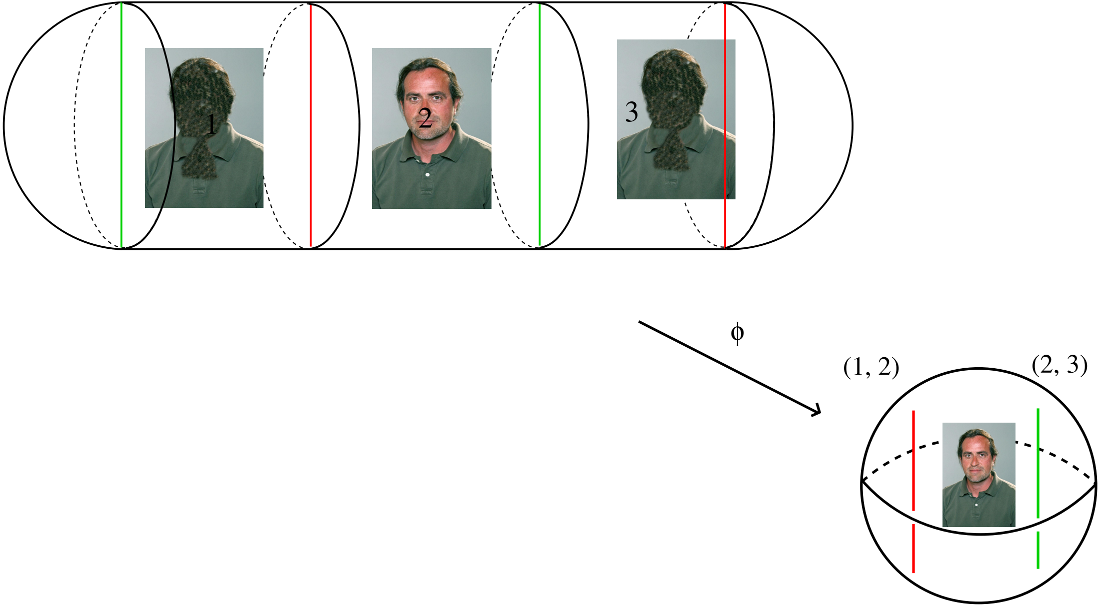
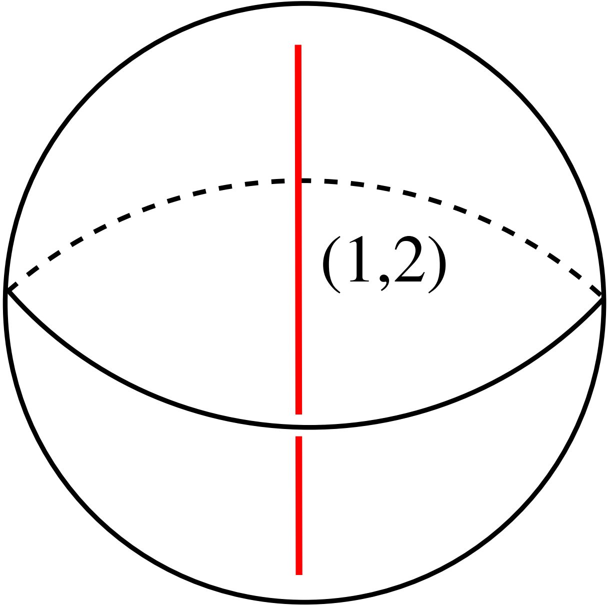
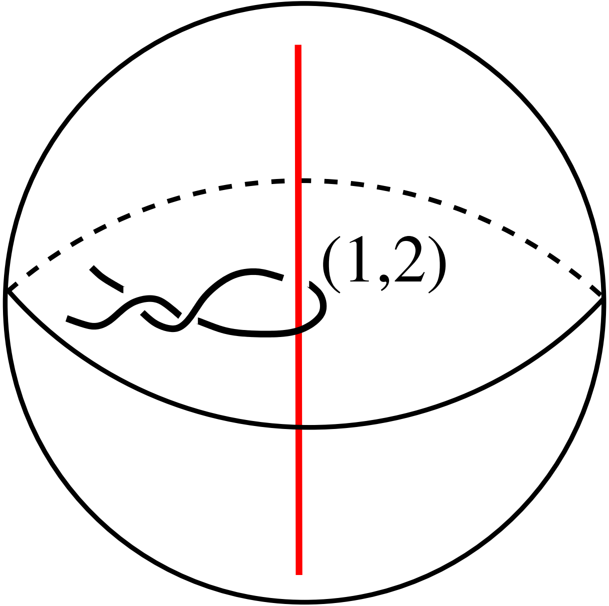
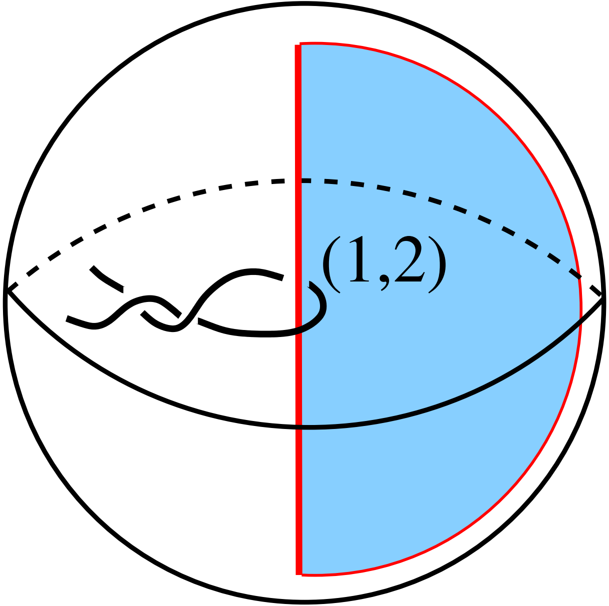


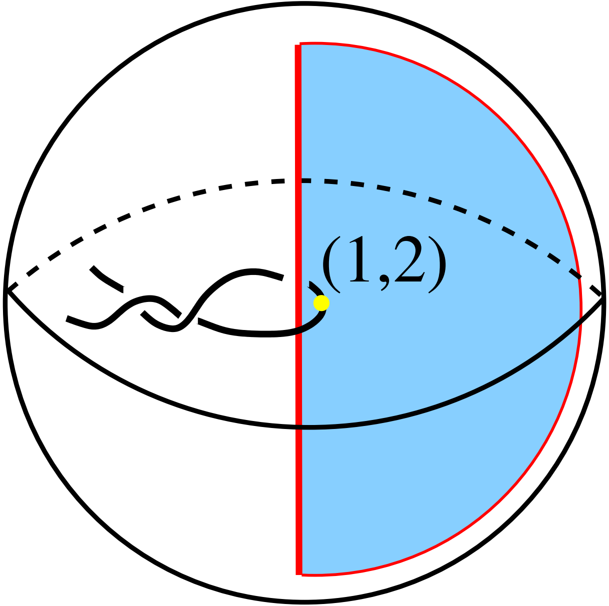
1
2
3
ϕ
(1, 2)
(2, 3)

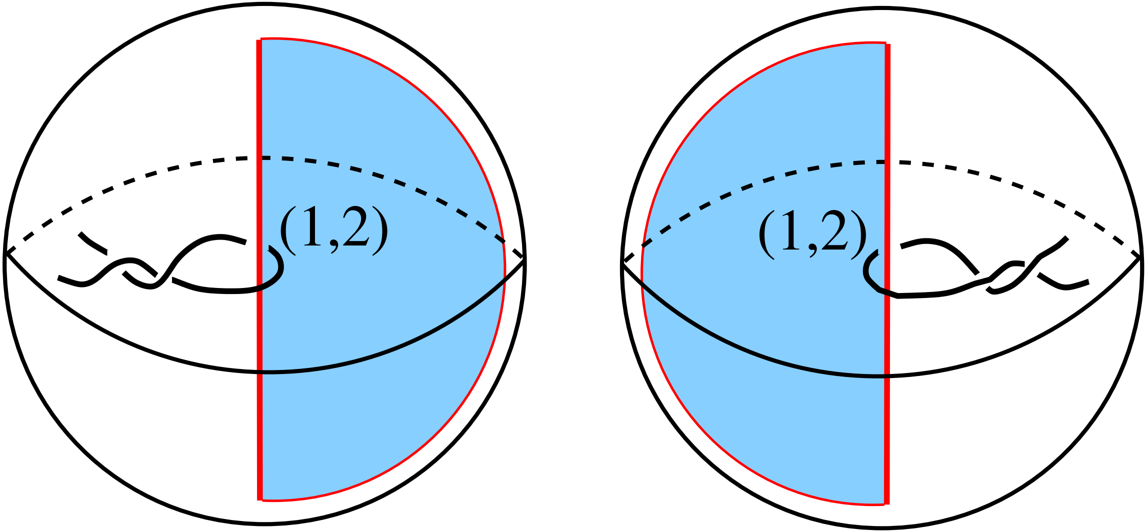
¿Y ahora, qué tal si..?

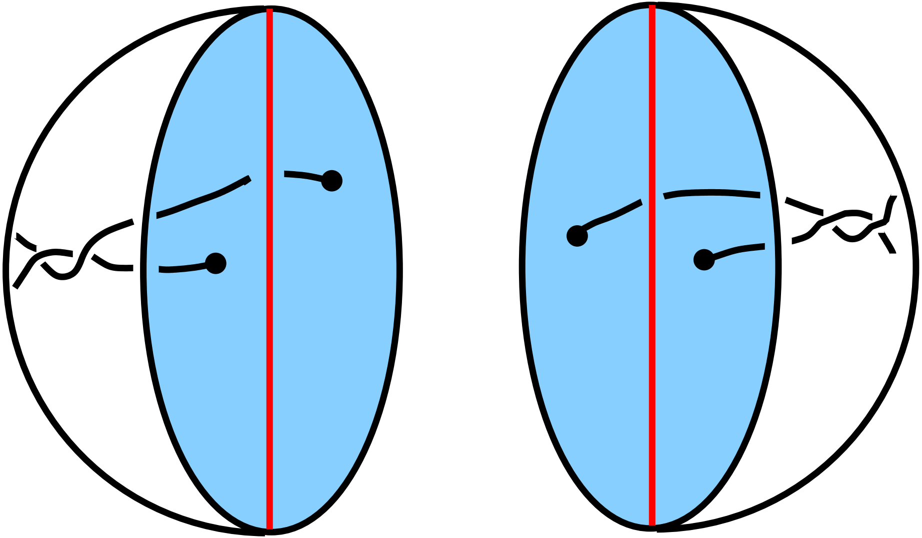

(1,2)


(1,2)

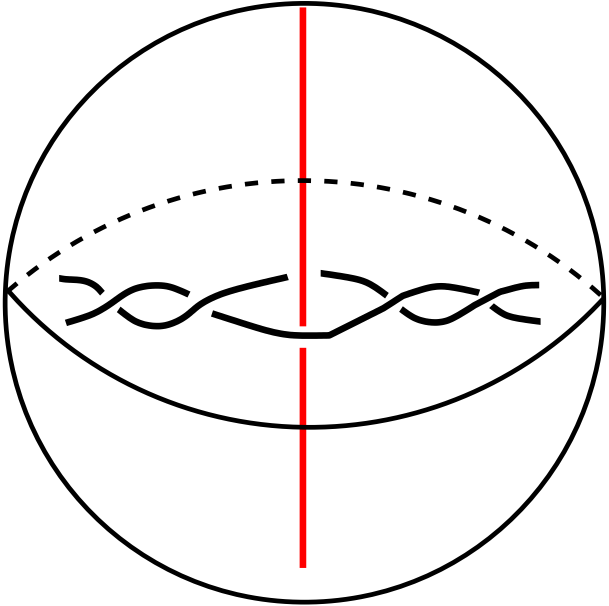

(1,2)

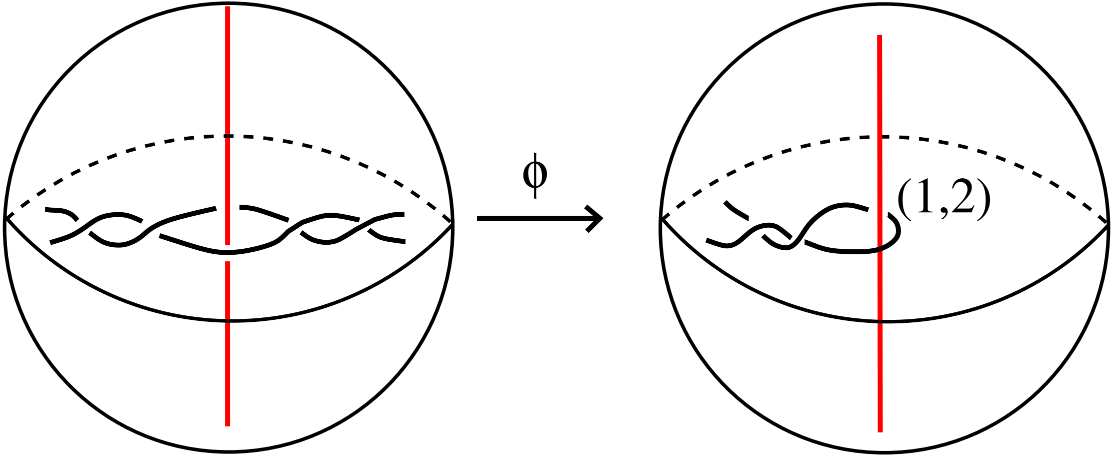

(1,2)


(1,2)
(1,2)

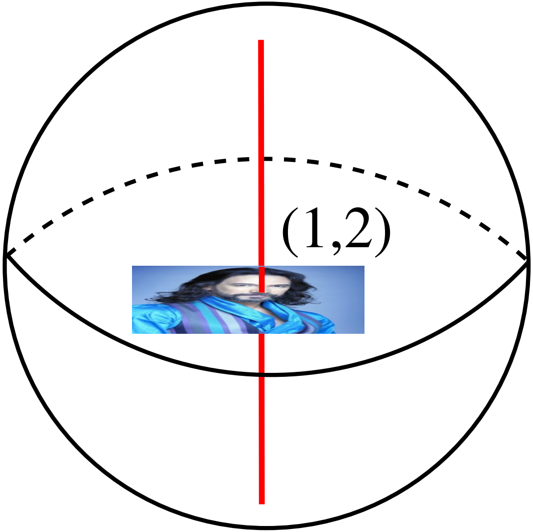


1 2

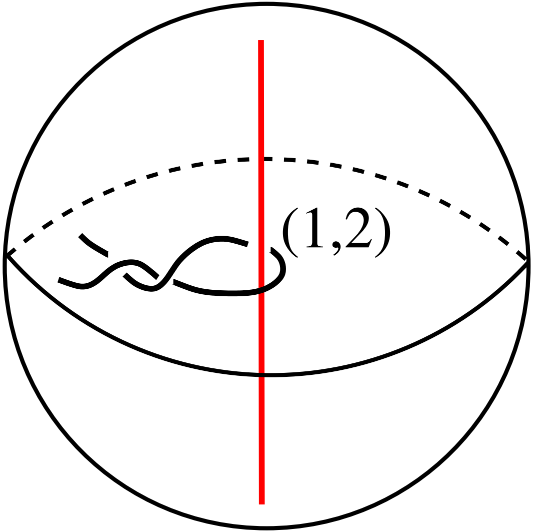


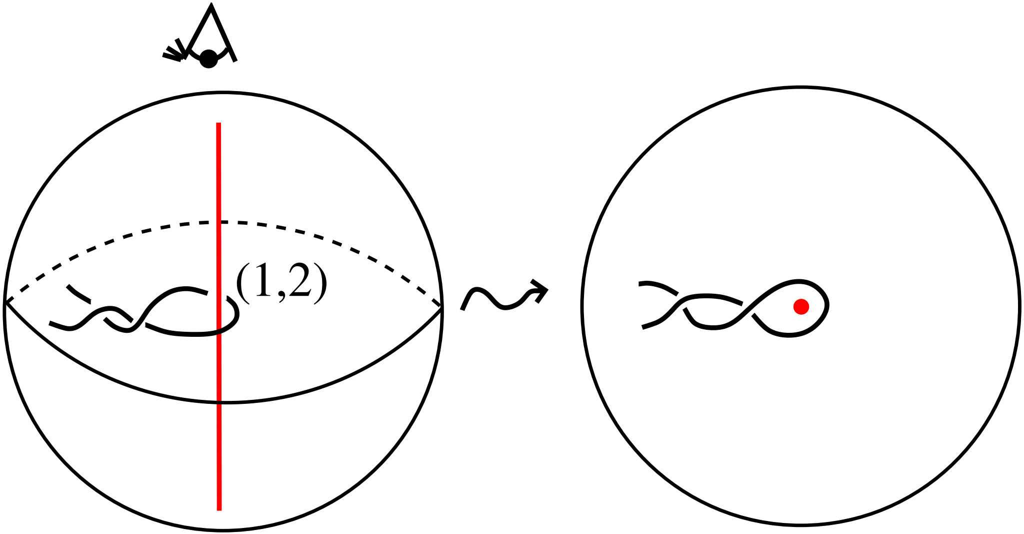

ϕ
(1,2)

Ejercicio:



Mejor:


(1,2)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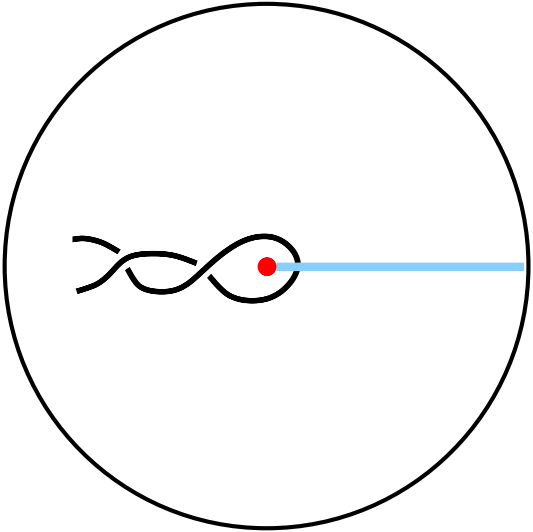

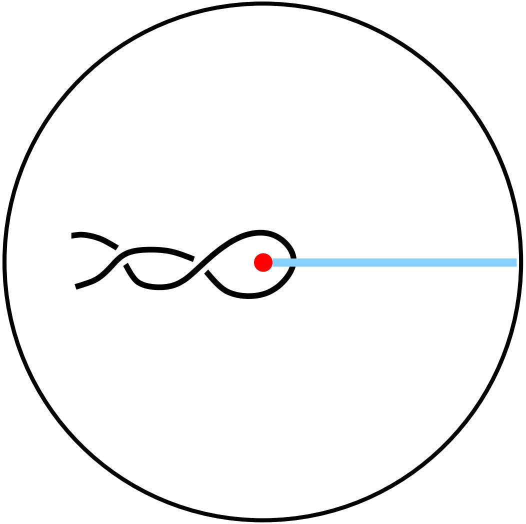

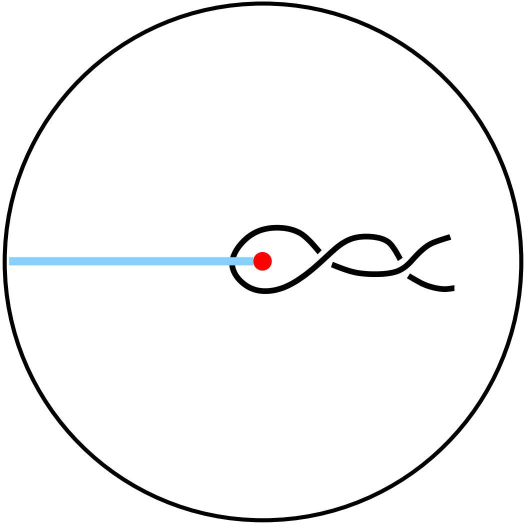

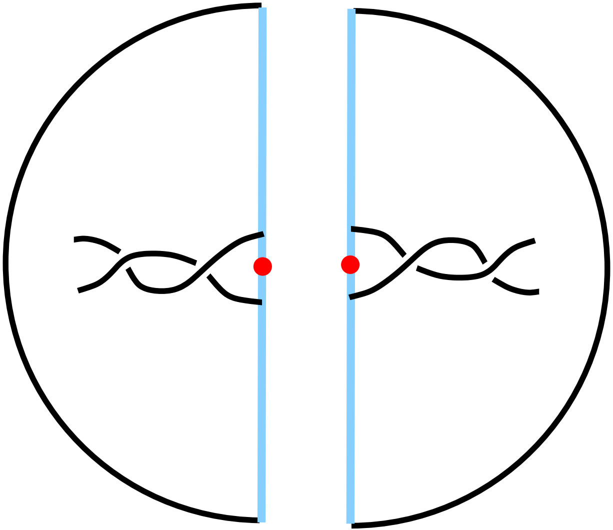

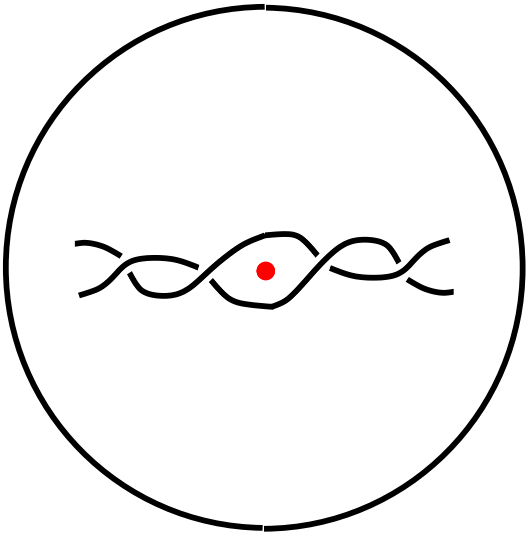

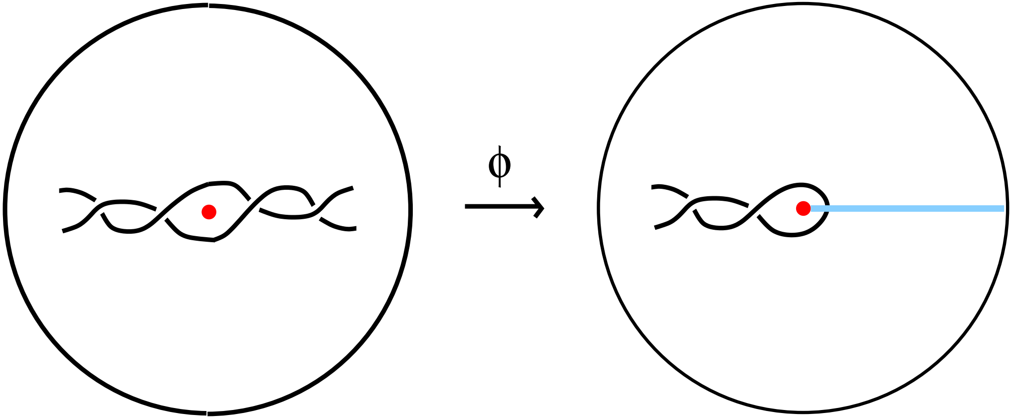
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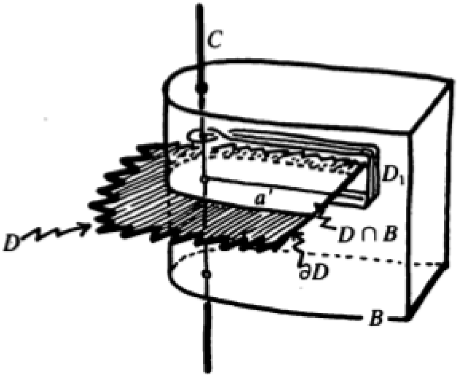
Ahora: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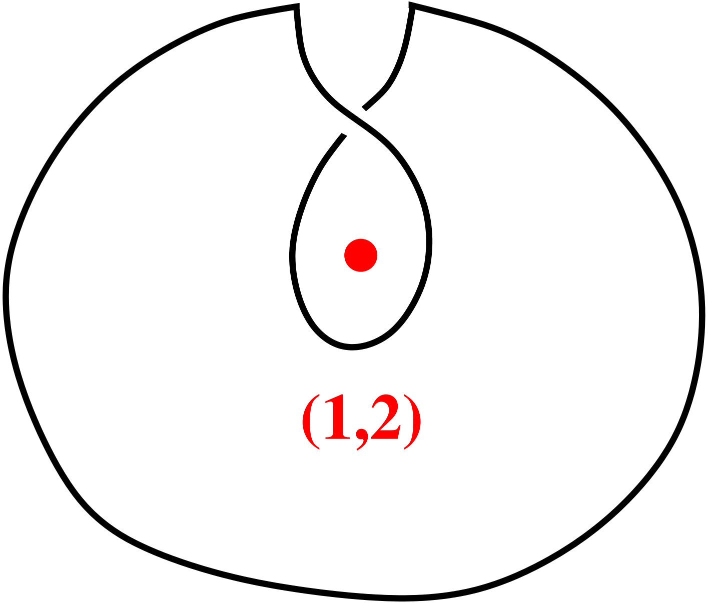
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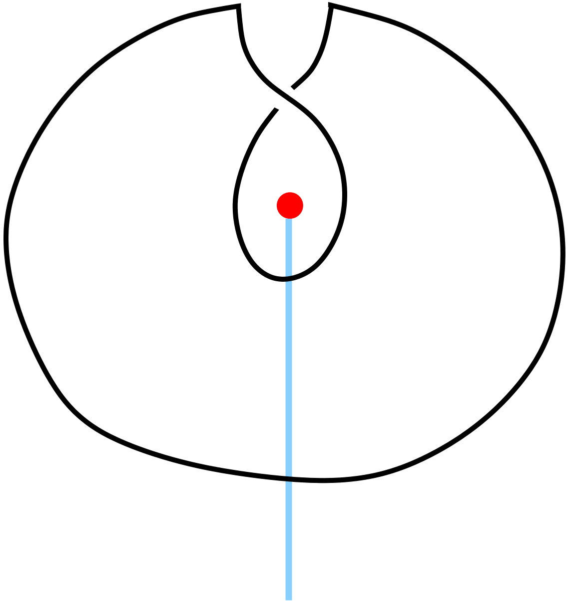

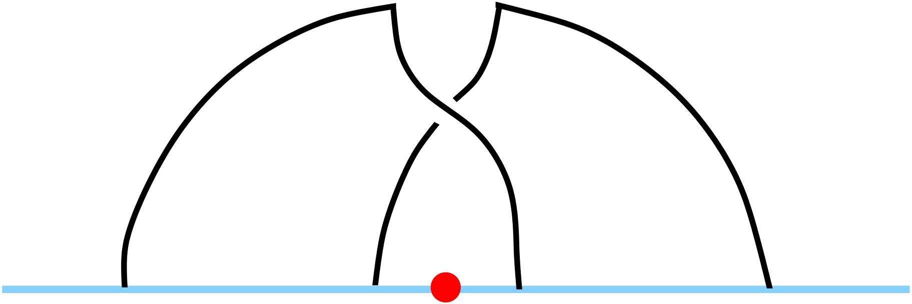

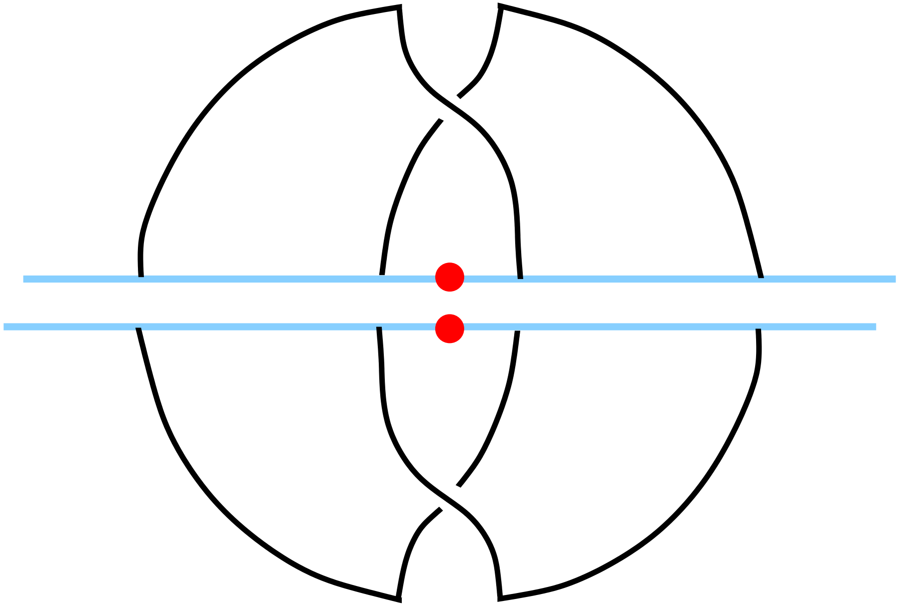

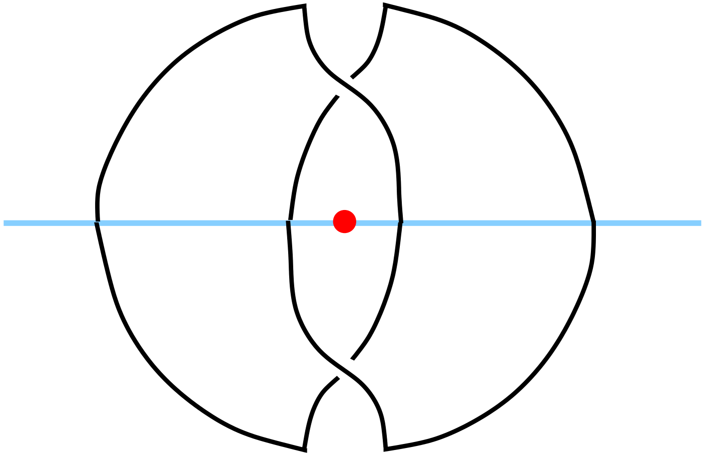

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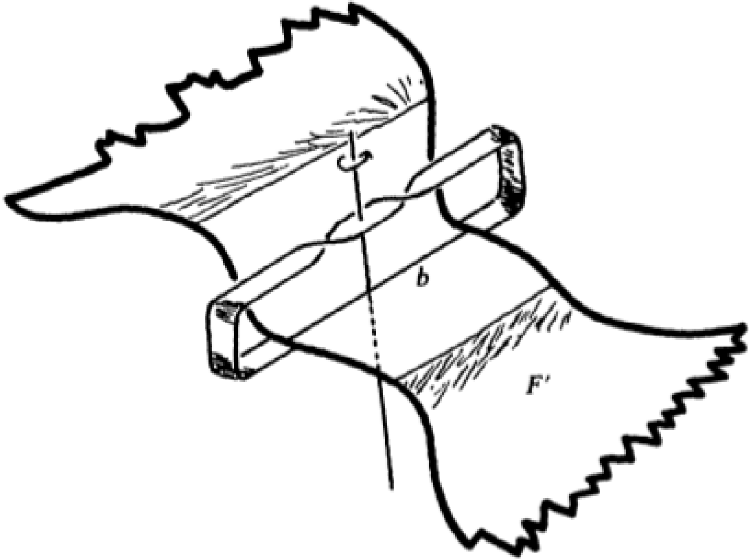
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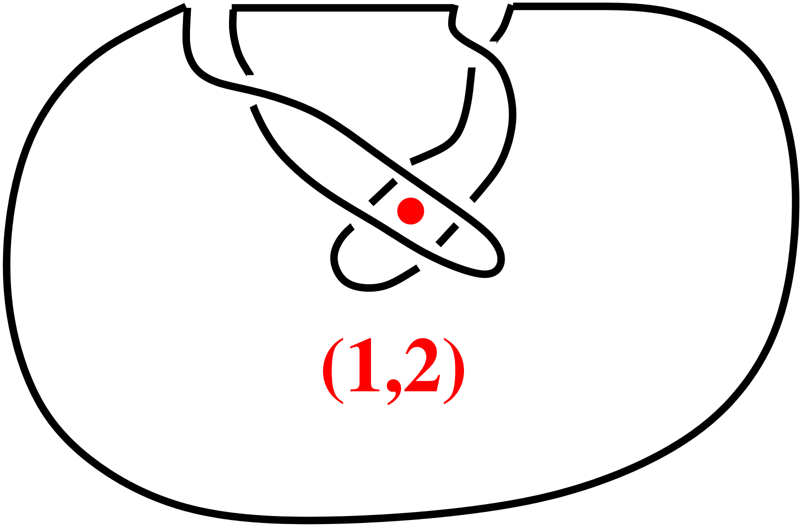

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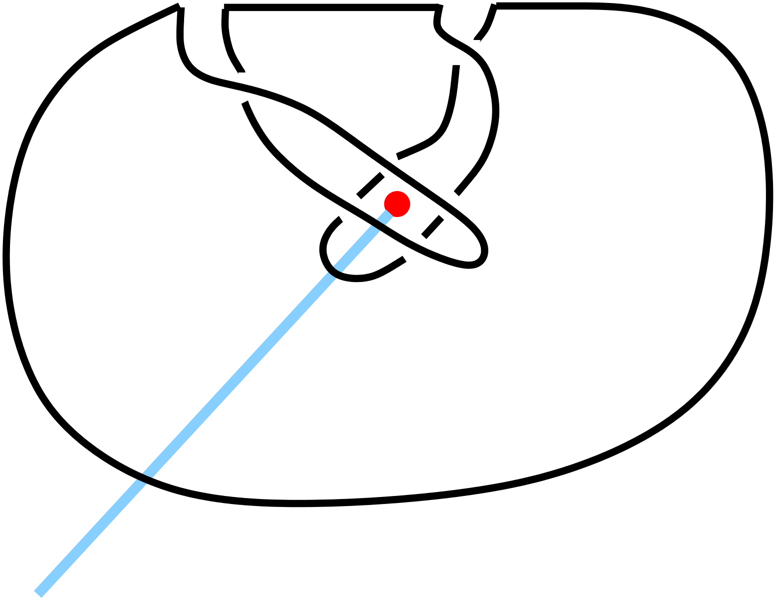
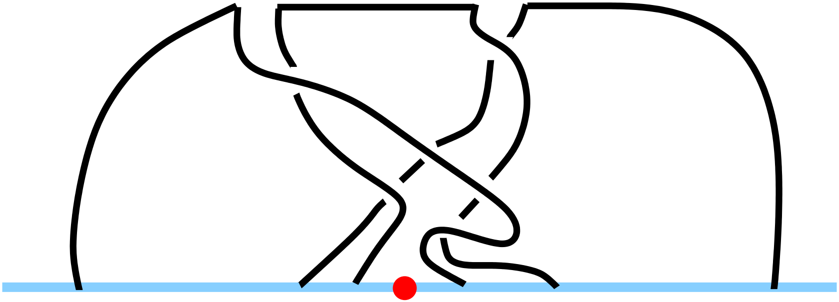
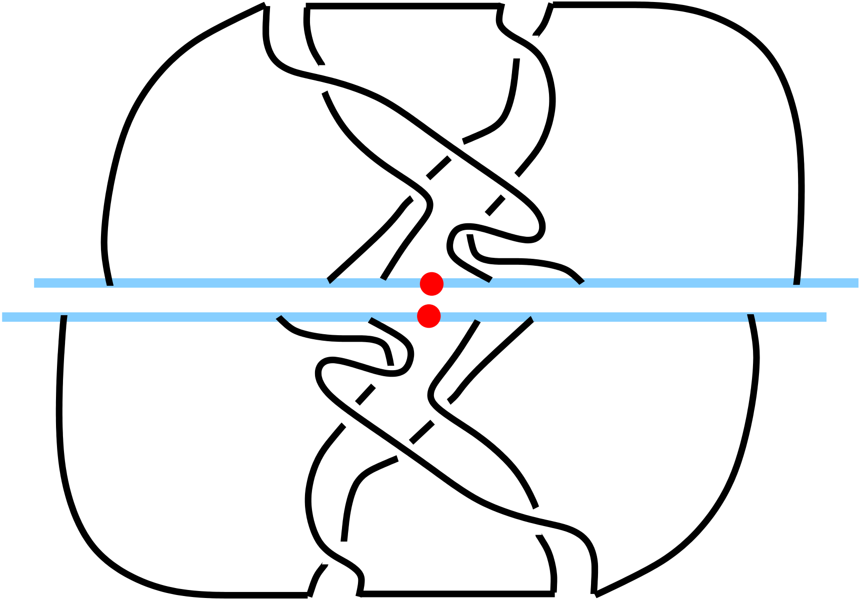
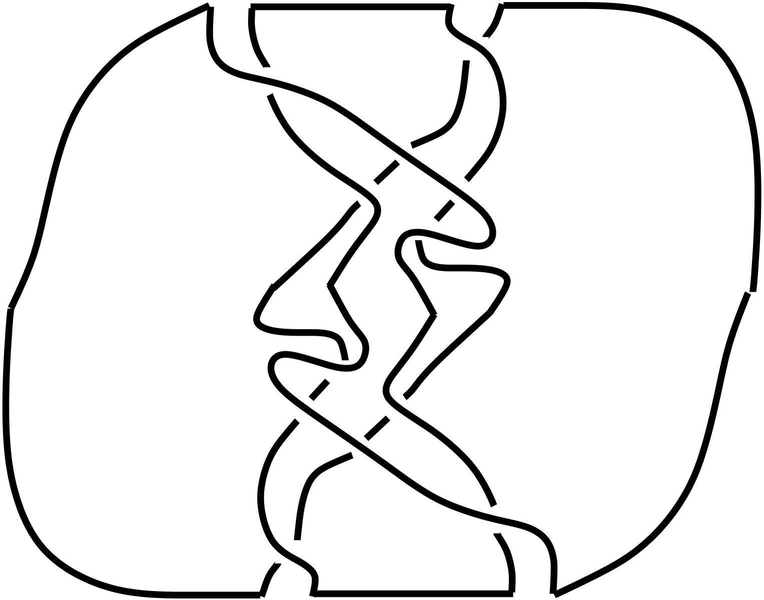
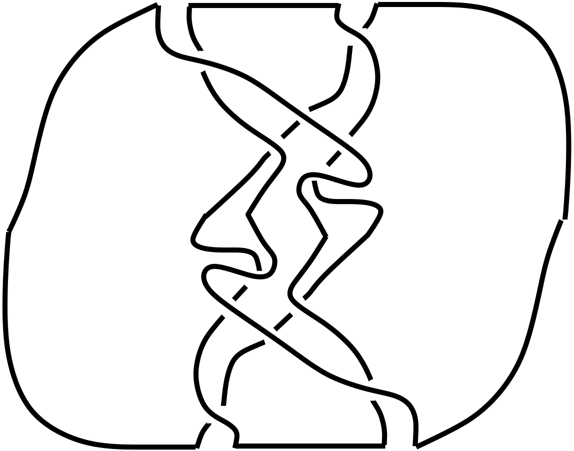
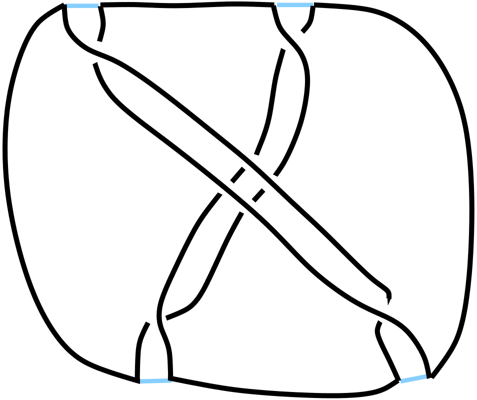




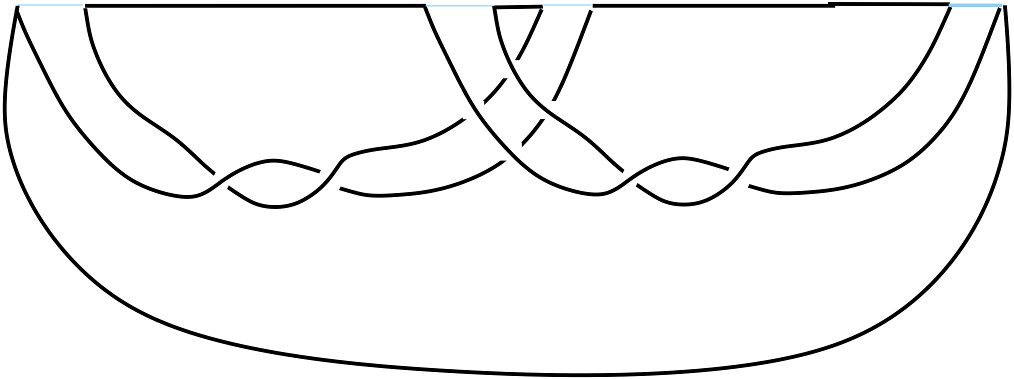




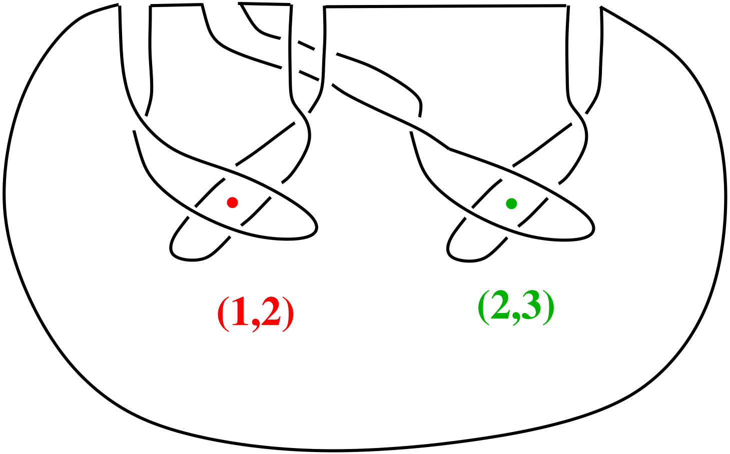




¡El mismísimo toro!



¿Y si ahora?



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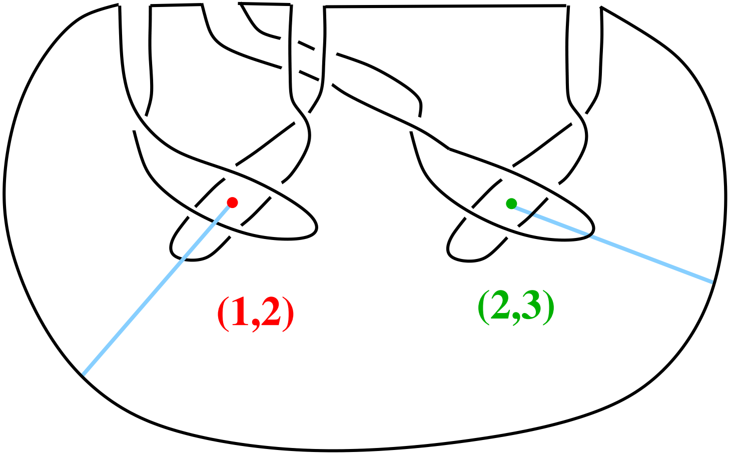
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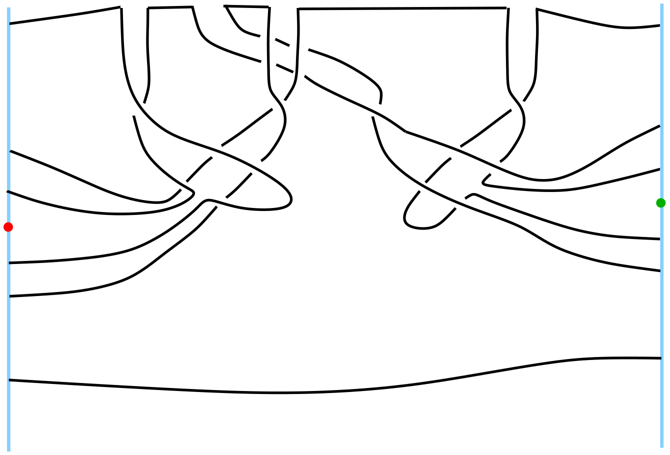
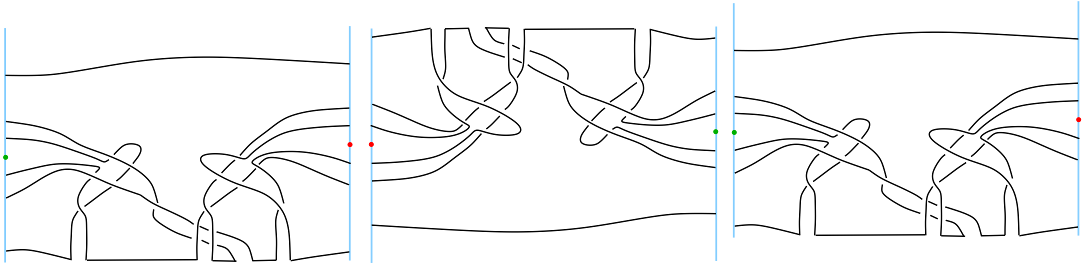
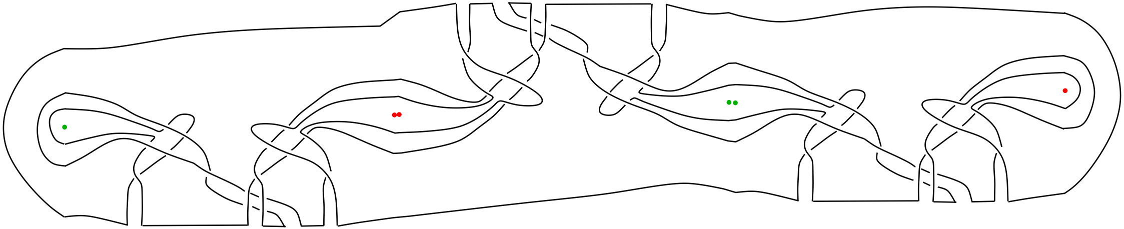
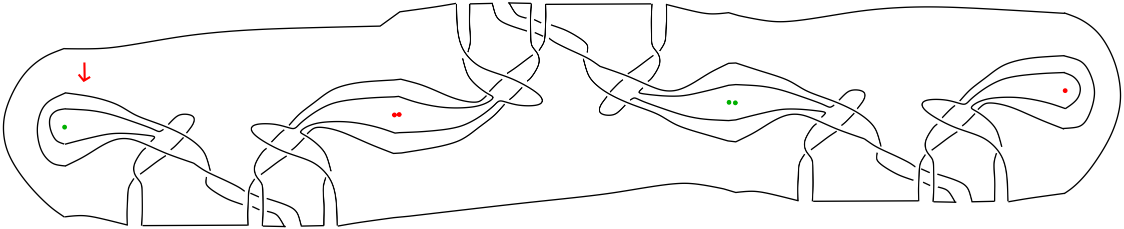
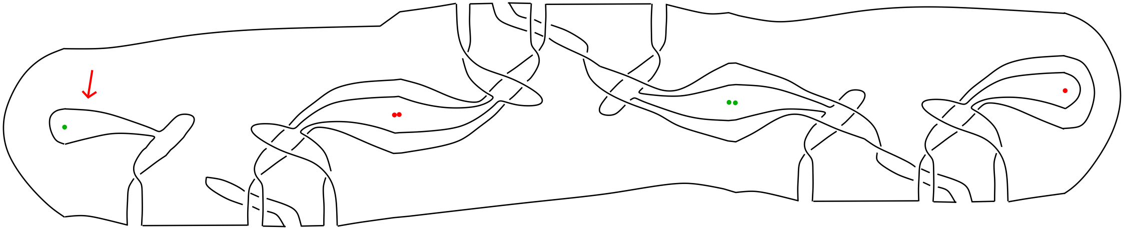


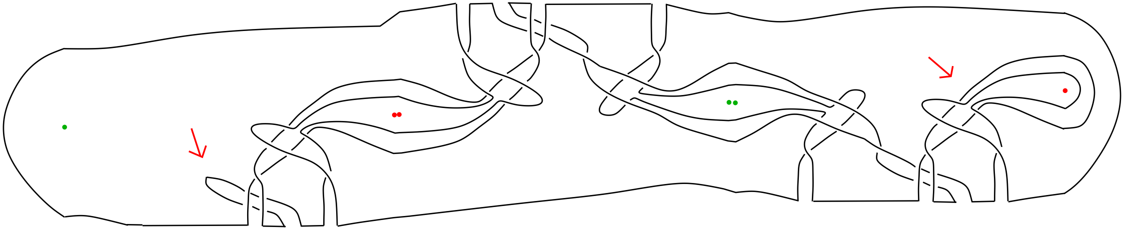


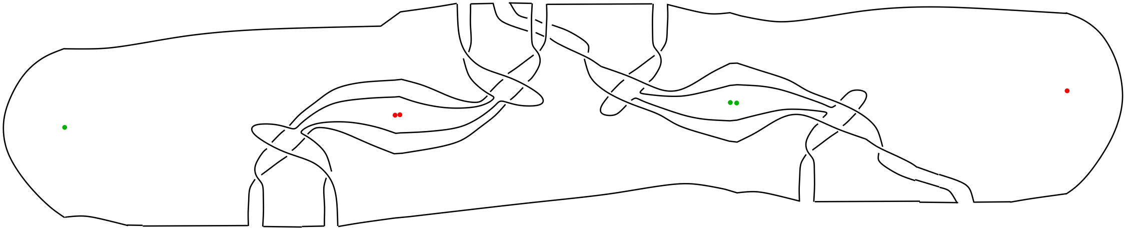


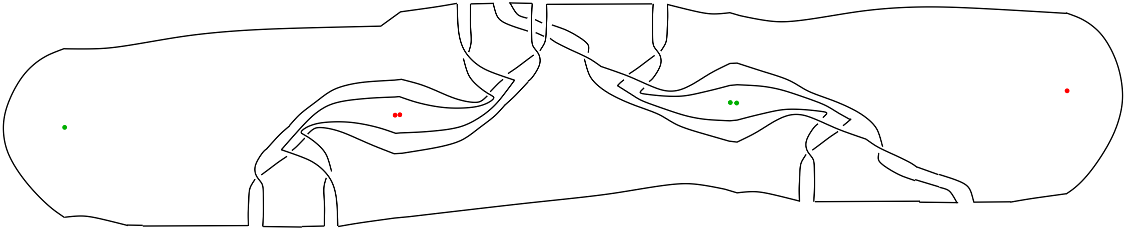
¿Se ve quién es?



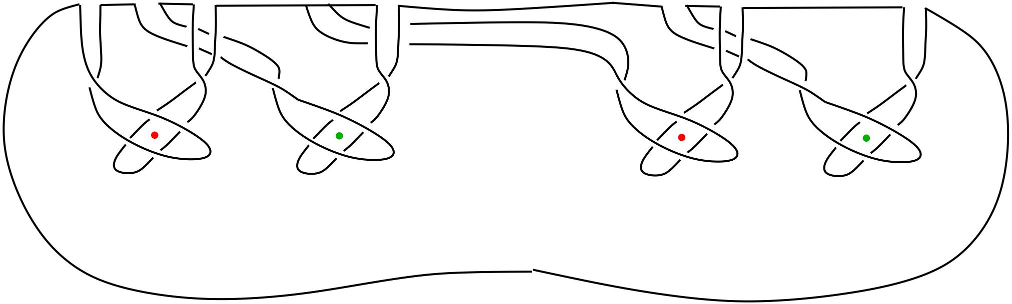


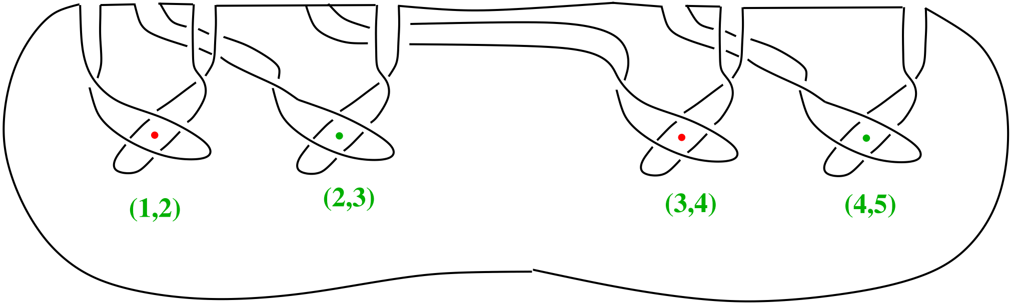






¿Y si ahora?





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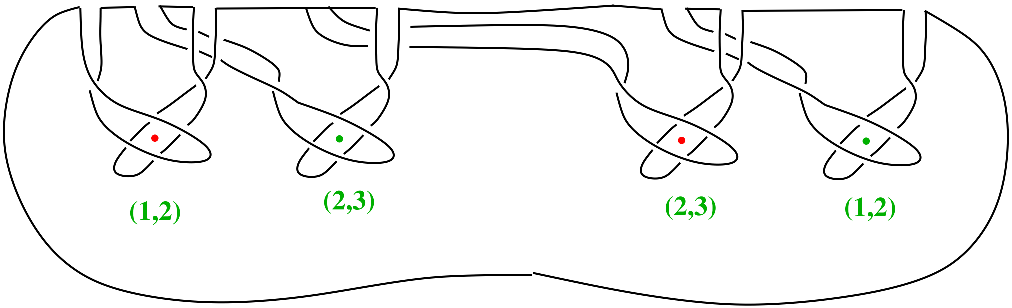
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