



## 1 Trip Planning

Author: Jonas Lorenz (TU Berlin)  
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### Challenge

Every year on Christmas Eve, Santa travels the cities Amsterdam (A), Berlin (B), Chicago (C), Delhi (D), Edinburgh (E), Florence (F), Gothenburg (G), Hong Kong (H), and Innsbruck (I) in a specific order and adapts his whole flight route to it. This year, the elves Madina and Elias have received the job of planning this route and decided to draw lots to get the order of the previously mentioned cities. Now, to write down the routes, which encompass each city exactly once, on the lots, Elias sorts the “route-words” alphabetically. For example, given three cities A, B, and C, Elias would produce the following six tickets:

Ticket no. 1: “A-B-C”, Ticket no. 2: “A-C-B”, Ticket no. 3: “B-A-C”,  
Ticket no. 4: “B-C-A”, Ticket no. 5: “C-A-B”, Ticket no. 6: “C-B-A”.

After having written the specific “route-words” onto every ticket, the elves throw them into a bowl. Elias shuffles the tickets a little, draws one of them, and reads out the route-word that is written on it:

“H-F-B-D-I-G-A-C-E”.

Madina ponders for a while and then proclaims the ticket’s number. Quite impressed, Elias confirms her statement.

What is the number of the drawn ticket?



Artwork: Julia Nurit Schönagel

**Possible answers:**

1. 308,510
2. 308,511
3. 308,512
4. 308,513
5. 308,514
6. 308,515
7. 308,516
8. 308,517
9. 308,518
10. 308,519