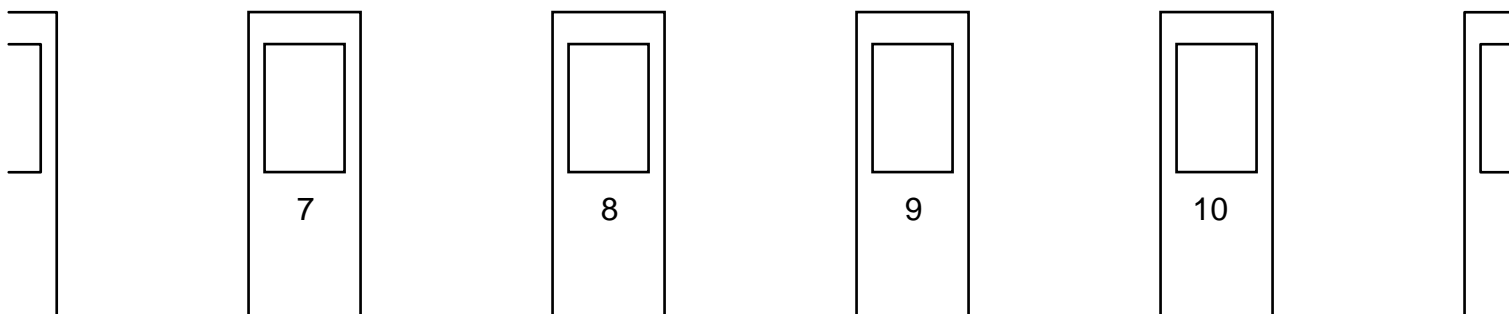


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A Very Long Hallway

The doors along one side of a very long hallway are numbered in order. The space between one door and the next door is always the same. Here is a picture of part of the hallway.



Here are some examples of how the spaces between doors can be counted:

- Door 7 and Door 8 are **1 space apart**.
- Door 7 and Door 10 are **3 spaces apart**.

1. How many spaces apart are Door 8 and Door 10?

2. How many spaces apart are Door 2 and Door 9?

3. What are the numbers of two doors that are **5 spaces apart**?
4. What are the numbers of two other doors that are **5 spaces apart**?
5. **How many spaces apart** are Door 8 and Door 21?
Show how you get your answer.
6. What are the numbers of two doors that are **19 spaces apart**. Show how you get your answer.
7. **How many spaces apart** are Door 8 and Door 93?
Show how you get your answer.

Extension:

8. What are the numbers of two doors that are **99 spaces apart**? Show how you get your answer.

9. What are the numbers of two doors that are **999 spaces apart**? Show how you get your answer.

10. What about **9,999 spaces apart**? **99,999 spaces apart**? Do you see a pattern in your answers? What is it?