

Seven questions, one lie

The challenge

You choose a number between 0 and 15 inclusive. The number must be an integer.

I'll ask you seven yes-no questions.

You answer the questions, and may lie up to once if you want to.

I'll tell you your number, whether you lied, and if so on which question—just using mathematics!

Ready?

Is your number. . .

1. one of 8, 9, 10, 11, 12, 13, 14, 15?
2. one of 4, 5, 6, 7, 12, 13, 14, 15?
3. one of 2, 3, 6, 7, 10, 11, 14, 15?
4. odd?
5. one of 1, 2, 4, 7, 9, 10, 12, 15?
6. one of 1, 2, 5, 6, 8, 11, 12, 15?
7. one of 1, 3, 4, 6, 8, 10, 13, 15?

Tell me your answers, and I'll tell you your number!

Your number is...

