King Arthur liked to invite his knights over for parties around the round table. When the king had a gift that he could only give to one knight, he had them play a game that went like this:

First, King Arthur numbered the chairs around the table. At the start, every chair was occupied by a knight. (King Arthur himself did not sit at the table.) Then he stood behind the knight in chair 1 and said, "You're In." Next, he moved to the knight in chair 2 and said, "You're Out," and that knight left his seat and went off to stand at the side of the room to watch the rest of the game. Next he moved to the knight in chair 3 and said, "You're In." Then he said, "You're Out" to the knight in the chair 4, and that knight left his seat and went to the side of the room.

He continued around the table in this matter. When he came back around to the knight in chair 1, he said either "You're In" or "You're Out," depending on what he had said to the last knight. (If the last knight was "In," then the first knight was now "Out, " and vice versa.)

The king kept moving around and around the table, alternately saying, "You're In" or "You're Out" to the knights that remained at the table. (If a chair was now empty, he just skipped it.) He continued until only one knight was left sitting at the table. That knight was the winner.

If you were a knight, which chair number would you try to sit in at King Arthur's table?

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # of knights | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Winning seat |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # of knights | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| Winning seat |  |  |  |  |  |  |  |  |  |  |  |  |  |

If there were 432 knights and you wanted to be chosen last, which seat would you take?