**Math card trick: Squared trick**

**Instructions for performing the trick**

1. Performer asks the helper to ix the cards.

2. Performer arranges the cards in 5 piles of 5 cards and lays them face up so that each card is places in one pile. We mark the piles in numbers 0,1,2,3,4,.. Performer asks the helper to memorize one card and to memorize the pile in which the card fell.

3. Performer turns the piles face down and asks the helper to show the pile that holds his card.

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| --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 |

4. Performer memorizes the pile that hides the card (they can pick a pile number 0,1,2,3,4). The pile is marked with letter S.

5. Performer collects the piles from left to right, so that the first pile is on top with cards facing down and the last pile is on the bottom, cards facing down.

6. Performer deals the cards face up in 5 piles, each cards falls in the next pile (1st card in pile 0, 2nd card in pile 1, 3rd card in pile 2, 4th card in pile 3, 5th card in pile 4, 6th card in pile 0) While dealing the cards, the performer asks the helper to memorize the pile in which the chosen card fell.

7. Performer asks the helper to show the pile where he saw his / her card (he can pick a pile number 0,1,2,3,4). We mark this pile in letter R.

8. Performer turns the piles face down.

9. Performer collects the cards the same way they were collected the first time.

10. Performer can deal the cards openly, or arrange them in the shape of a square. First he deals the front row of five cards and then all the other rows.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | S0 | S1 | S2 | S3 | S4 |
| R0 | 1 | 2 | 3 | 4 | 5 |
| R1 | 6 | 7 | 8 | 9 | 10 |
| R2 | 11 | 12 | 13 | 14 | 15 |
| R3 | 16 | 17 | 18 | 19 | 20 |
| R4 | 21 | 22 | 23 | 24 | 25 |

11. Performer knows that the card is in row number R and in column number S.

12. Performer can reveal that he knows which was the chosen card, or he can pretend that the trick isn’t over yet, to make it more imaginative and interesting (he can ask additional questions and take the cards slowly before he finds the one that was chosen by the helper)

2. Generalization of the trick

1. Performer asks the helper to pick a number from 1 to 25 and we mark that number as B.
2. We divide this number (B-1) by number 5.The result is number R and remainder S.
3. Performer asks the helper to mix the cards well.
4. Performer arranges cards in 5 piles of 5 cards face up. While dealing the cards, the performer asks the helper to memorize one of the cards and to remember the pile this cards was placed into.
5. Performer turns the piles face down and asks the helper to show the pile which hides his card.
6. Performer memorizes which of the 5 piles hides his card (any pile numbered 0,1,2,3,4).
7. Performer collects the piles consecutively, but keeps in mind to place the chosen pile to place S, which we calculated earlier.
8. Performer deals the cards face up in 5 piles so that each card falls in the next pile. While handing put the cards, he asks the helper to memorize the pile in which he saw his card.
9. Performer turns the piles face down.
10. Performer asks the helper to show the pile in which he saw his card (he can choose any pile numbered in 0,1,2,3,4).
11. Performer collects the pile consecutively, but keeps in mind to place the chosen pile to place R.
12. Performer can now hand in the pile to the helper, to find his card, which is in place B=R\*5+S+1.