Mental Poker

- Poker senza carte, con giocatori "curiosi" ma "onesti"
- Tre giocatori: **A**ssuntina, **B**iagio, **C**iro
- Cifratura e decifratura commutative:

$$D(E(x,k_1),k_2) = E(D(x,k_2),k_1)$$

Esempio: RSA con lo stesso modulo
[Shamir, Rivest, Adleman 1978]

Poker Mentale 0

Mental Poker: B ottiene 5 carte

Cifro e permuto le 52 carte
$E(x_1,k_A),\ldots,E(x_{52},k_A)$

$E(x_4,k_A),\ldots,E(x_{32},k_A)$

52 carte

Poker Mentale 1

Mental Poker: B ottiene 5 carte

Cifro e permuto le 52 carte
$E(x_1,k_A),\ldots,E(x_{52},k_A)$

$E(x_4,k_A),\ldots,E(x_{32},k_A)$

Scelgo 5 carte e le cifro

$E(E(x_5,k_A),k_B),\ldots,E(E(x_2,k_A),k_B)$

5 carte

Poker Mentale 2

Mental Poker: B ottiene 5 carte

Cifro e permuto le 52 carte
$E(x_1,k_A),\ldots,E(x_{52},k_A)$

$E(x_4,k_A),\ldots,E(x_{32},k_A)$

Scelgo 5 carte e le cifro

$E(E(x_5,k_A),k_B),\ldots,E(E(x_2,k_A),k_B)$

Decifro i 5 valori

$D(E(E(x_5,k_A),k_B),k_A),\ldots,D(E(E(x_2,k_A),k_B)k_A)$

5 carte

Poker Mentale 3

Mental Poker: B ottiene 5 carte

Cifro e permuto le 52 carte
$E(x_1,k_A),\ldots,E(x_{52},k_A)$

$E(x_4,k_A),\ldots,E(x_{32},k_A)$

Scelgo 5 carte e le cifro

$E(E(x_5,k_A),k_B),\ldots,E(E(x_2,k_A),k_B)$

Decifro i 5 valori

$E(x_5,k_B),\ldots,E(x_2,k_B)$

5 carte

Poker Mentale 4

Mental Poker: B ottiene 5 carte

Cifro e permuto le 52 carte
$E(x_1,k_A),\ldots,E(x_{52},k_A)$

$E(x_4,k_A),\ldots,E(x_{32},k_A)$

Scelgo 5 carte e le cifro

$E(E(x_5,k_A),k_B),\ldots,E(E(x_2,k_A),k_B)$

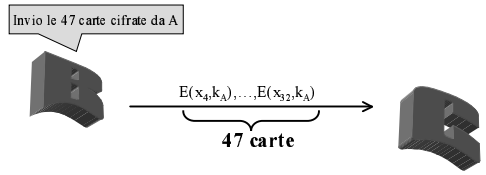
Decifro i 5 valori

$E(x_5,k_B),\ldots,E(x_2,k_B)$

Decifro i 5 valori
$x_5,\ldots,x_2$

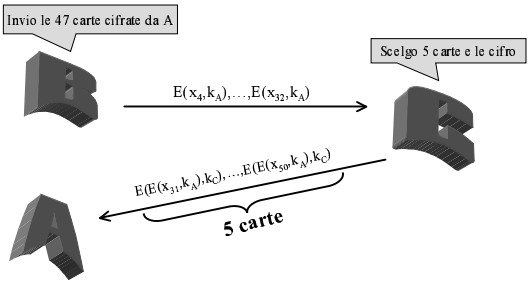
Poker Mentale 5

Mental Poker: C ottiene 5 carte



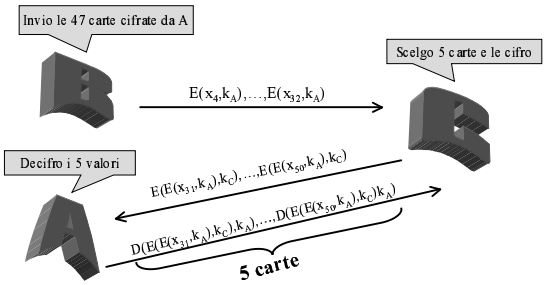
Poker Mentale 6

Mental Poker: C ottiene 5 carte



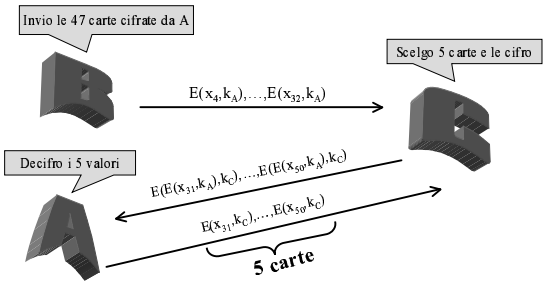
Poker Mentale 7

Mental Poker: C ottiene 5 carte



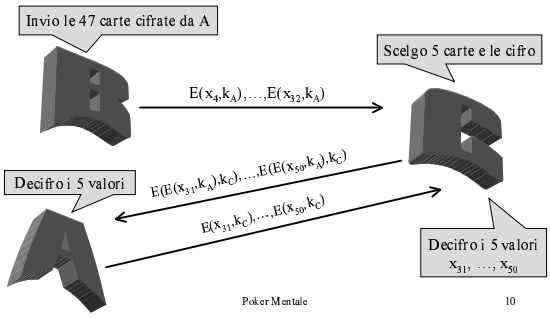
Poker Mentale 8

Mental Poker: C ottiene 5 carte



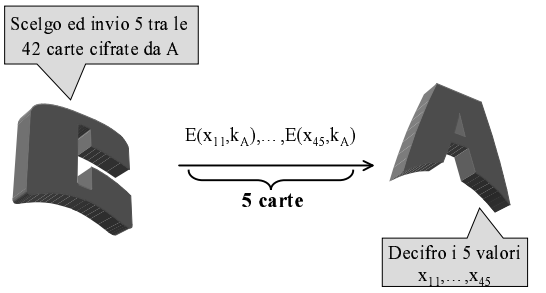
Poker Mentale 9

Mental Poker: C ottiene 5 carte



Poker Mentale 10

Mental Poker: A ottiene 5 carte



Poker Mentale 11