

**Analysis
For
Poker 3 Keno
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**Prepared
For
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Analysis of Poker 3 Keno

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Game Description:

Poker 3 Keno is a gambling wager based on the game of Poker known as Three Card Poker. In order to win, the Player must BOTH attain a particular minimum qualifying hand AND beat the Dealer's hand. If this happens, the Player will win even money. If the Player's hand ties the Dealer's hand (and is at least equal to the qualifying hand), the Player's wager shall push and be returned to the Player.

Poker 3 Keno uses a novel approach to dealing, by having each Player select 3 numbers between 1 and 49, representing the Player's cards. The 49 cards correspond to the cards in the deck after 3 cards have been dealt face down. These 3 cards represent the Dealer's cards.

While this approach is relatively unique, mathematically, it is identical to dealing cards from a random deck, so that both Player and Dealer receive 3 random cards from a 52-card deck. As such, the distribution of Poker hands is the same as any other random 3-card deal from a standard 52-card deck.

Several possible qualifying hands may be used for Poker 3 Keno:

- Queen High
- King High
- Queen-Jack High

There are two additional sidebets that the Player may wager on. Jurisdictions may choose to make either or both of these wagers mandatory. There is a 3-Card sidebet based on the Player's 3-card Poker hand and a 6-Card Bonus Sidebet based on both the Player's and Dealer's combined six cards.

Paytables for these sidebets are shown in the tables below:

3-Card Poker Sidebet Paytables					
Hand	PP-01 Pays*	PP-02 Pays*	PP-03 Pays*	PP-04 Pays*	PP-05 Pays*
3-Card Royal	50	50	50	50	50
Straight Flush	30	30	30	30	30
Three of a Kind	25	25	20	20	20
Straight	5	6	6	7	6
Flush	4	4	3	4	4
Pair	2	2	2	2	2
Payback	82.7692%	86.0271%	79.8914%	88.1086%	84.8507%
House Advantage	17.2308%	13.9729%	20.1086%	11.8914%	15.1493%

* All payouts are FOR 1

6-Card Bonus Paytables - Non Progressive			
Hand	6CB-01 Pays*	6CB-02 Pays*	6CB-03 Pays*
6-Card Royal – Diamonds	200,000	200,000	200,000
6-Card Royal – Other	20,000	20,000	20,000
5-Card Royal Flush	500	500	500
5-Card Straight Flush	200	100	250
Four of a Kind	100	50	100
Full House	25	25	25
5-Card Flush	15	20	15
5-Card Straight	10	10	10
Three of a Kind	5	5	5
Payback	81.8482%	82.4875%	82.2549%
House Advantage	18.1518%	17.5125%	17.7451%

* All Payouts are FOR 1

Hand	6CB-04P Pays*	6CB-05P Pays*
6-Card Royal – Diamonds	100%	100%
6-Card Royal – Other	10%	10%
5-Card Royal Flush	1000	500
5-Card Straight Flush	500	250
Four of a Kind	50	50
Full House	25	20
5-Card Flush	15	15
5-Card Straight	10	10
Three of a Kind	5	5
Contribution	5%	10%
Seed	100,000	100,000
Average Full Jackpot	859,943	1,642,963
Average Mini Jackpot	85,994	164,296
Payback	85.3530%	83.7910%
House Advantage	14.6470%	16.2090%

* All Payouts are FOR 1 (except two progressive payouts)

Analysis Methodology:

A computer program was created which simulated the results of Poker 3 Keno by dealing each of the possible 22,100 Player hands and the remaining 18,424 Dealer hands for each of the Player's hands. The program tabulated the frequency in which the Player's hand outranked the Dealer's hand AND was at least equal to the qualifying hand.

This program also tabulated the rank of the 3-Card Player hand and the best possible 5-card (or in the case of the 6-Card Royal - 6-card) poker hand from the combined hands of the Player and Dealer.

Using these frequencies, an exact payback can be calculated for each wager of Poker 3 Keno.

Results:

The simulation program was executed three times - once for each of the possible qualifying hands. The results of these simulations are shown in the tables below:

Player Wins by beating Dealer AND having at Least a Queen High				
Outcome	Occurrences	Frequency	Pays*	Contribution
Player Wins	185,663,764	45.5985%	2	91.1971%
Player/Dealer Tie	279,840	0.0687%	1	0.0687%
Player Loses	221,226,796	54.3327%	-	0.0000%
Total	407,170,400	100.0000%		91.2658%

* Includes the return of the original wager

Player Wins by beating Dealer AND having at Least a King High				
Outcome	Occurrences	Frequency	Pays*	Contribution
Player Wins	168,184,420	41.3057%	2	82.6113%
Player/Dealer Tie	212,784	0.0523%	1	0.0523%
Player Loses	238,773,196	58.6421%	-	0.0000%
Total	407,170,400	100.0000%		82.6636%

* Includes the return of the original wager

Player Wins by beating Dealer AND having at Least a Queen-Jack High				
Outcome	Occurrences	Frequency	Pays*	Contribution
Player Wins	171,723,460	42.1748%	2	84.3497%
Player/Dealer Tie	224,976	0.0553%	1	0.0523%
Player Loses	235,221,964	57.7699%	-	0.0000%
Total	407,170,400	100.0000%		84.4049%

* Includes the return of the original wager

To calculate the payback of the 3-Card Poker Sidebet, the frequency of each winning hand is multiplied by the payout of that hand. These values are summed to arrive at the payback of the wager for that payable. This calculation is shown in the tables below for each payable:

Paytable PP-01 Payback Calculation			
Hand	Frequency	Payout*	Contribution
3-Card Royal	0.0181%	50	0.9050%
Straight Flush	0.1991%	30	5.9729%
Three of a Kind	0.2353%	25	5.8824%
Straight	3.2579%	5	16.2896%
Flush	4.9593%	4	19.8371%
Pair	16.9412%	2	33.8824%
Payback			82.7692%
House Advantage			17.2308%

* Original wager is NOT returned. Pays are FOR 1

Paytable PP-02 Payback Calculation			
Hand	Frequency	Payout*	Contribution
3-Card Royal	0.0181%	50	0.9050%
Straight Flush	0.1991%	30	5.9729%
Three of a Kind	0.2353%	25	5.8824%
Straight	3.2579%	6	19.5475%
Flush	4.9593%	4	19.8371%
Pair	16.9412%	2	33.8824%
Payback			86.0271%
House Advantage			13.9729%

* Original wager is NOT returned. Pays are FOR 1

Paytable PP-03 Payback Calculation			
Hand	Frequency	Payout*	Contribution
3-Card Royal	0.0181%	50	0.9050%
Straight Flush	0.1991%	30	5.9729%
Three of a Kind	0.2353%	20	4.7059%
Straight	3.2579%	6	19.5475%
Flush	4.9593%	3	14.8778%
Pair	16.9412%	2	33.8824%
Payback			79.8914%
House Advantage			20.1086%

* Original wager is NOT returned. Pays are FOR 1

Paytable PP-04 Payback Calculation			
Hand	Frequency	Payout*	Contribution
3-Card Royal	0.0181%	50	0.9050%
Straight Flush	0.1991%	30	5.9729%
Three of a Kind	0.2353%	20	4.7059%
Straight	3.2579%	7	22.8054%
Flush	4.9593%	4	19.8371%
Pair	16.9412%	2	33.8824%
Payback			88.1086%
House Advantage			11.8914%

* Original wager is NOT returned. Pays are FOR 1

Paytable PP-05 Payback Calculation			
Hand	Frequency	Payout*	Contribution
3-Card Royal	0.0181%	50	0.9050%
Straight Flush	0.1991%	30	5.9729%
Three of a Kind	0.2353%	20	4.7059%
Straight	3.2579%	6	19.5475%
Flush	4.9593%	4	19.8371%
Pair	16.9412%	2	33.8824%
Payback			84.8507%
House Advantage			15.1493%

* Original wager is NOT returned. Pays are FOR 1

The hit frequency for the 3-Card Sidebet is 25.6109% for all paytables.

The payback of the 6-Card Bonus Sidebet is calculated in similar fashion. The frequency of each winning hand is multiplied by the payout of that hand and these values are summed. The calculation for each of the paytables is shown in the tables below:

Paytable 6CB-01 Payback Calculation			
Hand	Frequency	Payout*	Contribution
6-Card Royal – Diamonds	0.000005%	200,000	0.9824%
6-Card Royal – Other	0.000015%	20,000	0.2947%
5-Card Royal Flush	0.000904%	500	0.4519%
5-Card Straight Flush	0.008134%	200	1.6268%
Four of a Kind	0.072029%	100	7.2029%
Full House	0.815305%	25	20.3826%
5-Card Flush	1.010840%	15	15.1626%
5-Card Straight	1.776259%	10	17.7626%
Three of a Kind	3.596332%	5	17.9817%
Payback			81.8482%
House Advantage			18.1518%

* Original wager is NOT returned. Pays are FOR 1

Paytable 6CB-02 Payback Calculation			
Hand	Frequency	Payout*	Contribution
6-Card Royal – Diamonds	0.000005%	200,000	0.9824%
6-Card Royal – Other	0.000015%	20,000	0.2947%
5-Card Royal Flush	0.000904%	500	0.4519%
5-Card Straight Flush	0.008134%	100	0.8134%
Four of a Kind	0.072029%	50	3.6014%
Full House	0.815305%	25	20.3826%
5-Card Flush	1.010840%	20	20.2168%
5-Card Straight	1.776259%	10	17.7626%
Three of a Kind	3.596332%	5	17.9817%
Payback			82.4875%
House Advantage			17.5125%

* Original wager is NOT returned. Pays are FOR 1

Paytable 6CB-03 Payback Calculation			
Hand	Frequency	Payout*	Contribution
6-Card Royal – Diamonds	0.000005%	200,000	0.9824%
6-Card Royal – Other	0.000015%	20,000	0.2947%
5-Card Royal Flush	0.000904%	500	0.4519%
5-Card Straight Flush	0.008134%	250	2.0335%
Four of a Kind	0.072029%	100	7.2029%
Full House	0.815305%	25	20.3826%
5-Card Flush	1.010840%	15	15.1626%
5-Card Straight	1.776259%	10	17.7626%
Three of a Kind	3.596332%	5	17.9817%
Payback			82.2549%
House Advantage			17.7451%

* Original wager is NOT returned. Pays are FOR 1

For the Progressive versions of the 6-Card Bonus sidebet, we use the seed amount for the payout of the 6-Card Royal in Diamonds because this is the amount that must be put back on the meter each time this hand is hit. The 6-Card Royal - Other will have no payout because the entire pay comes from the meter itself and merely reduces the amount available for the full jackpot. We also add the contribution % to the payback that is calculated in the table as this amount is added to the meter and eventually is paid out to the Player as part of the two Jackpot pays. These calculations are shown in the tables below:

Paytable 6CB-04P Payback Calculation			
Hand	Frequency	Payout*	Contribution
6-Card Royal – Diamonds	0.000005%	100,000	0.4912%
6-Card Royal – Other	0.000015%	0	0.0000%
5-Card Royal Flush	0.000904%	1000	0.9038%
5-Card Straight Flush	0.008134%	500	4.0671%
Four of a Kind	0.072029%	50	3.6014%
Full House	0.815305%	25	20.3826%
5-Card Flush	1.010840%	15	15.1626%
5-Card Straight	1.776259%	10	17.7626%
Three of a Kind	3.596332%	5	17.9817%
Contribution			5.0000%
Payback			80.3530%
House Advantage			19.6470%

* Original wager is NOT returned. Pays are FOR 1

Paytable 6CB-05P Payback Calculation			
Hand	Frequency	Payout*	Contribution
6-Card Royal – Diamonds	0.000005%	100,000	0.4912%
6-Card Royal – Other	0.000015%	0	0.0000%
5-Card Royal Flush	0.000904%	500	0.4519%
5-Card Straight Flush	0.008134%	250	2.0335%
Four of a Kind	0.072029%	50	3.6014%
Full House	0.815305%	20	16.3061%
5-Card Flush	1.010840%	15	15.1626%
5-Card Straight	1.776259%	10	17.7626%
Three of a Kind	3.596332%	5	17.9817%
Contribution			10.0000%
Payback			83.7910%
House Advantage			16.2090%

* Original wager is NOT returned. Pays are FOR 1

The hit frequency for the 6-Card Bonus Sidebet is 7.2798% for all paytables.