

***Mathematical Analysis
Player's Choice Poker***

Prepared for

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Rules of Play

Player's Choice Poker is a new casino table game that is dealt with a standard deck of playing cards with or without a joker. The joker can be wild or semi-wild. The game can be played on a blackjack-sized table with six numbered betting circles for each player to wager on.

The dealer will deal either six three card stud poker hands, six five-card stud poker hands or six seven card stud poker hands, or any combination of the three, not to exceed six hands, depending on the casino operator's choice.

The object of the game is for the player to choose a number representing a stud poker hand that will qualify them for payment pursuant to a pay schedule. More than one hand can qualify for payment and players may wager on more than one hand. More than one player may wager on the same hand. Before the dealer deals any cards, each player must place a wager on one or more of the six numbered circles in front of the player's position, with each circle representing the hand of cards the player is wagering on.

After all six hands have been dealt the dealer shall announce each hand's value or rank and shall determine whether each hand qualifies for an award according to the pay schedule in use, which must appear on the table layout or on signage at the table. The dealer shall collect all losing wagers and shall pay all winning wagers according to the posted pay schedule.

Player's Choice Poker has six versions:

- 1) Three Card Stud Poker
It is played with a standard deck of 52 cards. Each betting spot will receive three cards. Winning hands start at a pair.
- 2) Three Card Stud Poker With Joker
It is played with a standard deck of 52 cards plus one joker. The joker is not wild but can be used to complete a straight, flush or straight flush or as an Ace. Winning hands start at a pair.
- 3) Five Card Stud Poker
It is played with a standard deck of 52 cards. Each betting spot will receive five cards. Winning hands start at a pair of 6s.
- 4) Five Card Stud Poker With Joker
It is played with a standard deck of 52 cards plus one joker. The joker is wild. Each betting spot will receive five cards. Winning hands start at a pair of 9s.

5) Seven Card Stud Poker

It is played with a standard deck of 52 cards. Each betting spot will receive seven cards to make the best five-card poker hand. Winning hands start at tens-high two pair.

6) Seven Card Stud Poker With Joker

It is played with a standard deck of 52 cards plus one joker. The joker is not wild but can be used to complete a straight, flush or straight flush or as an Ace. Each betting spot will receive seven cards to make the best five-card poker hand. Winning hands start at a straight.

The pay tables, probability distributions and house advantages are shown below:

Three Card Stud Poker (No Joker)

Pay Table A

Hand	Probability in %	Pay (to 1)	Return in %
Straight Flush	0.2172	40	8.6878
3 of a Kind	0.2353	33	7.7647
Straight	3.2579	6	19.5475
Flush	4.9593	4	19.8371
One Pair	16.9412	1	16.9412
Nothing	74.3891	-1	-74.3891

House edge 1.6109%

Pay Table B

Hand	Probability in %	Pay (to 1)	Return in %
Straight Flush	0.2172	40	8.6878
3 of a Kind	0.2353	30	7.0588
Straight	3.2579	6	19.5475
Flush	4.9593	4	19.8371
One Pair	16.9412	1	16.9412
Nothing	74.3891	-1	-74.3891

House edge 2.3167%

Pay Table C

Hand	Probability in %	Pay (to 1)	Return in %
Straight Flush	0.2172	40	8.6878
3 of a Kind	0.2353	35	8.2353
Straight	3.2579	5	16.2896
Flush	4.9593	4	19.8371
One Pair	16.9412	1	16.9412
Nothing	74.3891	-1	-74.3891

House edge 4.3982%

Pay Table D

Hand	Probability in %	Pay (to 1)	Return in %
Straight Flush	0.2172	40	8.6878
3 of a Kind	0.2353	30	7.0588
Straight	3.2579	6	19.5475
Flush	4.9593	3	14.8778
One Pair	16.9412	1	16.9412
Nothing	74.3891	-1	-74.3891

House edge 7.2760%

The hit frequency is 25.61%.

Three Card Stud Poker With Joker

Pay Table E

Hand Type	Way	Probability in %	Pay (to 1)	Return in %
Straight Flush without Joker	48	0.2049	40	8.1960
3 of a Kind	58	0.2476	30	7.4276
Straight Flush	100	0.4269	10	4.2688
Straight	1020	4.3541	4	17.4165
Flush	1308	5.5835	3	16.7506
Any Pair	3912	16.6994	1	16.6994
Nothing	16980	72.4836	-1	-72.4836

House edge 1.7246%.

Pay Table F

Hand Type	Way	Probability in %	Pay (to 1)	Return in %
Straight Flush without Joker	48	0.2049	40	8.1960
3 of a Kind	58	0.2476	30	7.4276
Straight Flush	100	0.4269	6	2.5613
Straight	1020	4.3541	4	17.4165
Flush	1308	5.5835	3	16.7506
Any Pair	3912	16.6994	1	16.6994
Nothing	16980	72.4836	-1	-72.4836

House edge 3.4321%.

Pay Table G

Hand Type	Way	Probability in %	Pay (to 1)	Return in %
Straight Flush without Joker	48	0.2049	40	8.1960
3 of a Kind	58	0.2476	25	6.1897
Straight Flush	100	0.4269	7	2.9881
Straight	1020	4.3541	4	17.4165
Flush	1308	5.5835	3	16.7506
Any Pair	3912	16.6994	1	16.6994
Nothing	16980	72.4836	-1	-72.4836

House edge 4.2431%.

Pay Table H

Hand Type	Way	Probability in %	Pay (to 1)	Return in %
Straight Flush without Joker	48	0.2049	40	8.1960
3 of a Kind	58	0.2476	25	6.1897
Straight Flush	100	0.4269	5	2.1344
Straight	1020	4.3541	4	17.4165
Flush	1308	5.5835	3	16.7506
Any Pair	3912	16.6994	1	16.6994
Nothing	16980	72.4836	-1	-72.4836

House edge 5.0969%.

The hit frequency is 27.52%.

Five Card Stud Poker (No Joker)

Pay Table I

Hand Type	Probability in %	Pay (to 1)	Return in %
Royal Flush	0.000154	500	0.0770
Straight Flush	0.001385	100	0.1385
4 of a Kind	0.024010	50	1.2005
Full House	0.144058	15	2.1609
Flush	0.196540	10	1.9654
Straight	0.392465	9	3.5322
3 of a Kind	2.112845	4	8.4514
Two Pair	4.753902	3	14.2617
Pair of 6s or Better	29.254779	1	29.2548
Nothing	63.119863		-63.1199

House edge 2.0776%

Pay Table J

Hand Type	Probability in %	Pay (to 1)	Return in %
Royal Flush	0.000154	500	0.0770
Straight Flush	0.001385	100	0.1385
4 of a Kind	0.024010	40	0.9604
Full House	0.144058	15	2.1609
Flush	0.196540	10	1.9654
Straight	0.392465	7	2.7473
3 of a Kind	2.112845	4	8.4514
Two Pair	4.753902	3	14.2617
Pair of 6s or Better	29.254779	1	29.2548
Nothing	63.119863		-63.1199

House edge 3.1026%

Pay Table K

Hand Type	Probability in %	Pay (to 1)	Return in %
Royal Flush	0.000154	500	0.0770
Straight Flush	0.001385	100	0.1385
4 of a Kind	0.024010	50	1.2005
Full House	0.144058	10	1.4406
Flush	0.196540	8	1.5723
Straight	0.392465	6	2.3548
3 of a Kind	2.112845	4	8.4514
Two Pair	4.753902	3	14.2617
Pair of 6s or Better	29.254779	1	29.2548
Nothing	63.119863		-63.1199

House edge 4.3684%

Pay Table L

Hand Type	Probability in %	Pay (to 1)	Return in %
Royal Flush	0.000154	500	0.0770
Straight Flush	0.001385	100	0.1385
4 of a Kind	0.024010	40	0.9604
Full House	0.144058	10	1.4406
Flush	0.196540	8	1.5723
Straight	0.392465	5	1.9623
3 of a Kind	2.112845	4	8.4514
Two Pair	4.753902	3	14.2617
Pair of 6s or Better	29.254779	1	29.2548
Nothing	63.119863		-63.1199

House edge 5.0009%

The hit frequency is 36.8801%.

Five Card Stud Poker With Joker

Pay Table M

Hand Type	Probability in %	Pay (to 1)	Return in %
Natural Royal	0.000139	500	0.0697
5 of a Kind	0.000453	100	0.0453
Wild Royal Flush	0.000697	60	0.0418
Straight Flush	0.006272	30	0.1882
4 of a Kind	0.108723	20	2.1745
Full House	0.228318	15	3.4248
Flush	0.271946	10	2.7195
Straight	0.715479	6	4.2929
3 of a Kind	4.783800	3	14.3514
2 Pair	4.305420	3	12.9163
Pair of 9s or Better	23.388769	1	23.3888
Nothing	66.189983	-1	-66.1900

House edge 2.5770%

Pay Table N

Hand Type	Probability in %	Pay (to 1)	Return in %
Natural Royal	0.000139	500	0.0697
5 of a Kind	0.000453	100	0.0453
Wild Royal Flush	0.000697	60	0.0418
Straight Flush	0.006272	30	0.1882
4 of a Kind	0.108723	20	2.1745
Full House	0.228318	15	3.4248
Flush	0.271946	10	2.7195
Straight	0.715479	5	3.5774
3 of a Kind	4.783800	3	14.3514
2 Pair	4.305420	3	12.9163
Pair of 9s or Better	23.388769	1	23.3888
Nothing	66.189983	-1	-66.1900

House edge 3.2925%

Pay Table P

Hand Type	Probability in %	Pay (to 1)	Return in %
Natural Royal	0.000139	500	0.0697
5 of a Kind	0.000453	100	0.0453
Wild Royal Flush	0.000697	60	0.0418
Straight Flush	0.006272	30	0.1882
4 of a Kind	0.108723	20	2.1745
Full House	0.228318	10	2.2832
Flush	0.271946	8	2.1756
Straight	0.715479	6	4.2929
3 of a Kind	4.783800	3	14.3514
2 Pair	4.305420	3	12.9163
Pair of 9s or Better	23.388769	1	23.3888
Nothing	66.189983	-1	-66.1900

House edge 4.2625%

Pay Table Q

Hand Type	Probability in %	Pay (to 1)	Return in %
Natural Royal	0.000139	500	0.0697
5 of a Kind	0.000453	100	0.0453
Wild Royal Flush	0.000697	60	0.0418
Straight Flush	0.006272	30	0.1882
4 of a Kind	0.108723	15	1.6308
Full House	0.228318	10	2.2832
Flush	0.271946	9	2.4475
Straight	0.715479	5	3.5774
3 of a Kind	4.783800	3	14.3514
2 Pair	4.305420	3	12.9163
Pair of 9s or Better	23.388769	1	23.3888
Nothing	66.189983	-1	-66.1900

House edge 5.2496%

The hit frequency is 33.81%.

A computer simulation of 500 million hands was run to verify the accuracy of the Joker Five Card Stud analysis.

Seven Card Stud Poker (No Joker)

Pay Table R

Hand Type	Probability in %	Pay (to 1)	Expected Return in %
Royal Flush	0.003232	250	0.808016
Straight Flush	0.027851	20	0.557015
4 of a Kind	0.168067	7	1.176471
Full House	2.596102	5	12.980511
Flush	3.025494	4	12.101976
Straight	4.619382	3	13.858146
3 of a Kind	4.829870	2	9.659740
10s-high 2 Pair	15.396700	1	15.396700
Nothing	69.333301	-1	-69.333301
Total	100.000000		-2.794726

House edge: 2.79%

Pay Table S

Hand Type	Probability in %	Pay (to 1)	Expected Return in %
Royal Flush	0.003232	1000	3.232062
Straight Flush	0.027851	80	2.228060
4 of a Kind	0.168067	7	1.176471
Full House	2.596102	5	12.980511
Flush	3.025494	4	12.101976
Straight	4.619382	2	9.238764
3 of a Kind	4.829870	2	9.659740
10s-high 2 Pair	15.396700	1	15.396700
Nothing	69.333301	-1	-69.333301
Total	100.000000		-3.319017

House edge: 3.32%

Pay Table T

Hand Type	Probability in %	Pay (to 1)	Expected Return in %
Royal Flush	0.003232	500	1.616031
Straight Flush	0.027851	100	2.785075
4 of a Kind	0.168067	30	5.042017
Full House	2.596102	5	12.980511
Flush	3.025494	3	9.076482
Straight	4.619382	2	9.238764
3 of a Kind	4.829870	2	9.659740
10s-high 2 Pair	15.396700	1	15.396700
Nothing	69.333301	-1	-69.333301
Total	100.000000		-3.537981

House edge: 3.54%

Pay Table U

Hand Type	Probability in %	Pay (to 1)	Expected Return in %
Royal Flush	0.003232	500	1.616031
Straight Flush	0.027851	50	1.392537
4 of a Kind	0.168067	10	1.680672
Full House	2.596102	5	12.980511
Flush	3.025494	4	12.101976
Straight	4.619382	2	9.238764
3 of a Kind	4.829870	2	9.659740
10s-high 2 Pair	15.396700	1	15.396700
Nothing	69.333301	-1	-69.333301
Total	100.000000		-5.266369

House edge: 5.27%

Pay Table V

Hand Type	Probability in %	Pay (to 1)	Expected Return in %
Royal Flush	0.003232	500	1.616031
Straight Flush	0.027851	50	1.392537
4 of a Kind	0.168067	15	2.521008
Full House	2.596102	5	12.980511
Flush	3.025494	3	9.076482
Straight	4.619382	2	9.238764
3 of a Kind	4.829870	2	9.659740
10s-high 2 Pair	15.396700	1	15.396700
Nothing	69.333301	-1	-69.333301
Total	100.000000		-7.451527

House edge: 7.45%

The hit frequency for the following pay tables is 30.67%.

Seven Card Stud Poker With Joker

Pay Table W

Hand Type	Ways	Probability in %	Pay	Return in %
5 Aces	1128	0.00073179	1000	0.731788
Royal Flush	26132	0.01695308	250	4.238270
Straight Flush	184832	0.11990937	50	5.995469
4 of a Kind	307472	0.19947182	25	4.986795
Full House	4188528	2.71729876	5	13.586494
Flush	6172088	4.00412915	4	16.016517
3 of a Kind	7672500	4.97751829	3	14.932555
Straight	11034204	7.15841671	2	14.316833
Nothing	124556196	80.80557103	-1	-80.805571
Total	154143080	100.00000000		-6.000851

House edge: 6.0%.

Pay Table X

Hand Type	Ways	Probability in %	Pay	Return in %
5 Aces	1128	0.00073179	500	0.365894
Royal Flush	26132	0.01695308	250	4.238270
Straight Flush	184832	0.11990937	50	5.995469
4 of a Kind	307472	0.19947182	25	4.986795
Full House	4188528	2.71729876	5	13.586494
Flush	6172088	4.00412915	4	16.016517
3 of a Kind	7672500	4.97751829	3	14.932555
Straight	11034204	7.15841671	2	14.316833
Nothing	124556196	80.80557103	-1	-80.805571
Total	154143080	100.00000000		-6.366744

House edge: 6.37%.

Pay Table Y

Hand Type	Ways	Probability in %	Pay	Return in %
5 Aces	1128	0.00073179	500	0.365894
Royal Flush	26132	0.01695308	200	3.390616
Straight Flush	184832	0.11990937	40	4.796375
4 of a Kind	307472	0.19947182	25	4.986795
Full House	4188528	2.71729876	5	13.586494
Flush	6172088	4.00412915	4	16.016517
3 of a Kind	7672500	4.97751829	3	14.932555
Straight	11034204	7.15841671	2	14.316833
Nothing	124556196	80.80557103	-1	-80.805571
Total	154143080	100.00000000		-8.413492

House edge: 8.41%.

Pay Table Z

Hand Type	Ways	Probability in %	Pay	Return in %
5 Aces	1128	0.00073179	500	0.365894
Royal Flush	26132	0.01695308	200	3.390616
Straight Flush	38728	0.02512471	50	1.256235
St. Flush with Joker	146104	0.09478466	30	2.843540
Four of a Kind	307472	0.19947182	25	4.986795
Full House	4188528	2.71729876	5	13.586494
Flush	6172088	4.00412915	4	16.016517
Three of a Kind	7672500	4.97751829	3	14.932555
Straight	11034204	7.15841671	2	14.316833
Nothing	124556196	80.80557103	-1	-80.805571
Total	154143080	100.00000000		-9.110092

House edge: 9.11%.

Pay Table Z1

Hand Type	Ways	Probability in %	Pay	Return in %
5 Aces	1128	0.00073179	500	0.365894
Royal Flush	26132	0.01695308	200	3.390616
Straight Flush	38728	0.02512471	50	1.256235
St. Flush with Joker	146104	0.09478466	30	2.843540
Four of a Kind	307472	0.19947182	25	4.986795
Full House	4188528	2.71729876	6	16.303793
Flush	6172088	4.00412915	4	16.016517
Three of a Kind	7672500	4.97751829	3	14.932555
Straight	11034204	7.15841671	2	14.316833
Nothing	124556196	80.80557103	-1	-80.805571
Total	154143080	100.00000000		-6.392793

House edge: 6.39%.

The hit frequency is 19.19%.

Player's Choice Poker is simple and easy to learn. Novice players won't feel intimidated because they don't play against the dealer or other players and there is no strategy to learn. Also, they can bet any hand they like, a feature that enables them to bet hands that are "on a hot streak."