

Expected Wins for Standard Keno with 80 Numbers

Using Standard Keno Probability and Empirical Data Probability

Game with 80 Numbers
House Draws 20 Numbers
Player Picks 10 Spots

9/15/2016

Catches	Standard Keno Probability	Empirical Data Probability (see note below)
4	0.3063%	30.63%
5	0.0645%	6.45%
6	0.0129%	1.29%
7	0.0024%	0.24%
8	0.0004%	0.04%
9	0.0001%	0.01%
10	0.000011%	0.00%

To use this spreadsheet, enter the number of locations and the prize caps desired.

Specifications for Customer's Keno System

Business Hours per Day 24
Business Days per Month 30

Location Plays

Expected Players per Hour 3 per location
Draws per Ticket 5
Tickets per hour 2
Tickets per Day 144
Tickets per Month 4320
Price of keno Cards 0.01 \$43.20

Draws Played per Hour 30
Plays per Day 720
Plays per Month 21600 per location

Locations in Network

50

<--- Enter number of locations

Expected Plays per Month in Network 1080000
Expected Tickets Played in Network 216000
Revenue From keno Card Sales \$2,160.00

Keno Draws per Hour 15
(draw at 4 minute interval)
Draws per Day 360
Draws per Month 10800

**Spot's Expected Wins and Payout
using standard keno probability**

Catches (matches)	Monthly Wins	Prize Cap	Monthly Payout	Wins Per Day	Payout Per Day
4	33.08	\$0.00	\$0.00	1.1	\$0.00
5	6.97	\$5.00	\$34.83	0.2	\$1.16
6	1.39	\$10.00	\$13.93	0.0	\$0.46
7	0.26	\$50.00	\$13.18	0.0	\$0.44
8	0.05	\$100.00	\$4.69	0.0	\$0.16
9	0.00	\$200.00	\$0.00	0.0	\$0.00
10	0.00	\$500.00	\$0.00	0.0	\$0.00
Total Monthly Prize Payout (using capped prize amounts)			\$66.63	1.4	\$2.22

Each Location Payout Cost \$1.33 50 locations

**Spot's Expected Wins and Payout
using probability from empirical testing data collected by Thomas Butler**

Enter your prize caps here:

Catches (matches)	Monthly Wins	Prize Cap	Monthly Payout	Network Wins Per Day	Network Payout Per Day	Location Wins Per Day	Location Payout Per Day
4	3308	\$0.00	\$0.00	110.3	\$0.00	2.2	\$0.00
5	697	\$2.00	\$1,393.04	23.2	\$46.43	0.5	\$0.93
6	139	\$5.00	\$696.52	4.6	\$23.22	0.1	\$0.46
7	26	\$10.00	\$263.55	0.9	\$8.78	0.0176	\$0.18
8	4.7	\$20.00	\$93.87	0.2	\$3.13	0.0031	\$0.06
9	0.8	\$20.00	\$15.64	0.0	\$0.52	0.0005	\$0.01
10	0.1	\$20.00	\$2.42	0.0	\$0.08	0.0001	\$0.00
Total Monthly Prize Payout (using capped prize amounts)			\$2,465.04	139.2	\$82.17		\$1.64

NOTE: catch of 9 or 10 will probably not happen

Less keno Card Revenue \$1.44
Net Gain (Loss) Per Location -\$0.20

Each Location Payout Cost \$49.30 50 locations

Note on empirical data probability:

The probabilities were computed from testing draws and picks using the OFG keno game developed by Thomas Butler. Two tests were run to validate the OFG keno system:

Test #1, 10,000 picks against 1 draw for five draws; result was 32% for 4 spots, 6 % for 5 spots, etc.

Test #2, 3,200 picks against 600 draws. Results were essentially the same as in test #1

The tests show the probability consistent regardless of the number of picks or draws; which was expected, since the probability is a function of the combination computations. In this case for standard keno with 80 numbers, house picks 20 numbers, and the player picks 10 spots and must have x number of catches to win.

Keno Glossary:

House	keno game operator, (casino, etc.)
Catch	number picked by player that matches a house pick
Spot	number picked by player
Draw	series of numbers picked by the house