

Blackjack probability and house-edge examples with separate assumptions

These examples measure different events. Natural probabilities use a fresh shoe before conditioning on dealer cards. House edge is expected loss per initial wager, not the chance of losing a hand.

Quantity	Model	Value or meaning
Initial player natural	Fresh single deck, no dealer-card conditioning	4.8265%
Initial player natural	Fresh six-deck shoe, no dealer-card conditioning	4.7489%
Bust on one hit from hard 16	Infinite deck	61.54%
Eventual dealer bust showing 6	Infinite deck, S17	42.32%
Illustrative house edge	Published infinite-deck S17 example (source below)	0.511734% of the initial wager
Win a hand	Depends on rules, strategy and outcome definition	42.43% in the separately stated simulation below

Net outcomes example: 42.43% win, 8.48% push, 49.09% loss. Wizard of Odds basic-strategy simulation uses six decks, S17, double any first two cards, DAS, late surrender, resplitting aces and up to three resplits. Results combine any split hands from one initial position.

Sources: wizardofodds.com/games/blackjack/expected-return-infinite-deck/ and wizardofodds.com/games/blackjack/variance/. These are different models, not universal table odds.

Explanations: blackjackchart.co/odds/ and blackjackchart.co/bust-probability/. Probability does not replace basic strategy.

Player bust probability on one hit - infinite deck

Infinite deck: each ace through 9 has probability 1/13; ten-value cards together have probability 4/13. Only the next hit is measured. An ace can fall from 11 to 1, so a currently soft hand cannot bust on one hit.

Current hard total	Busting next cards	Probability
11 or less	None	0.00%
12	10, J, Q, K	30.77%
13	9, 10, J, Q, K	38.46%
14	8, 9, 10, J, Q, K	46.15%
15	7, 8, 9, 10, J, Q, K	53.85%
16	6, 7, 8, 9, 10, J, Q, K	61.54%
17	5, 6, 7, 8, 9, 10, J, Q, K	69.23%
18	4, 5, 6, 7, 8, 9, 10, J, Q, K	76.92%
19	3, 4, 5, 6, 7, 8, 9, 10, J, Q, K	84.62%
20	2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K	92.31%
Soft hand	None on the next hit	0.00%

Explanations: blackjackchart.co/odds/ and blackjackchart.co/bust-probability/. Probability does not replace basic strategy.

Dealer eventual bust probability - infinite deck, after ruling out blackjack

Infinite deck, eventual dealer bust. S17 stands on soft 17; H17 hits soft 17. With ten and ace upcards, values condition on a US peek having ruled out dealer blackjack. Player card removal is ignored.

Dealer upcard	S17	H17
2	35.36%	35.67%
3	37.39%	37.67%
4	39.45%	39.71%
5	41.64%	41.77%
6	42.32%	43.95%
7	26.23%	26.23%
8	24.47%	24.47%
9	22.84%	22.84%
10	22.98%	22.98%
A	16.65%	20.07%

Explanations: blackjackchart.co/odds/ and blackjackchart.co/bust-probability/. Probability does not replace basic strategy.