Connor Nelson

ODDs

Preflop

Flush:

Suited → 5 chances for 3 or more

cards with $\frac{11}{50} \cdot \frac{10}{4a} \cdot \frac{9}{48}$

so $\underline{23.54\%}$

Not suited → Need 4 of 5 to

match and with 5

combos $\binom{5}{4}$ we get

3.4

Straight:

Connectors

JT → 54 gives 9%

JQ, 4, 3   6%

QK, 32   4.9%

AK, A2   2.57%

Straight:

Within rage of each other = 4.32 %

Not within range: Need 4 specific values

with 4 combos with odds of

$$\frac{16}{50} \cdot \frac{12}{49} \cdot \frac{8}{48} \cdot \frac{7}{47} \quad so \quad 3.12 \%$$

Pair:

Pockets ≠ 100%

Otherwise 33.25

6 outs over 5 draws with

odds increasing from

$$\frac{6}{50} \quad to \quad \frac{6}{4.8}$$

Set:

Pockets

5 chances, 2 outs 5 combos

from $\frac{2}{2} \frac{2}{50}$ to $\frac{2}{46}$ so $\frac{1}{8}$ or 02.5%

Not pockets → Need 2 cards out of

5 with odds $\frac{2}{50}$ and $\frac{1}{49}$

Post flop

Connor Nelson

Flush

Max suit $= 5 \Rightarrow 100\%$

Max Suit $= 4 \Rightarrow 1 - \frac{37}{46} \cdot \frac{36}{45} = 35.6\%$

Max Suit $= 3 \Rightarrow \frac{10}{46} \cdot \frac{9}{45} = 4.34\%$

Otherwise 0

Straight

four to a straight

In a row

8 outs with 2 chances so

$$1 - \frac{38}{46} \cdot \frac{37}{45} = 32\%$$

With a Gut shot

4 outs, 2 chances so

$$1 - \frac{42}{46} \cdot \frac{41}{45} = 16.8$$

Three to a straight

In a row

Need 2 specific cards, 2 tries

$$2 \cdot \frac{8}{46} \cdot \frac{4}{45} = 0.031$$

Not in a row
    Need 2 specific cards (value)
        so
        $$\frac{8}{46} \cdot \frac{4}{45} = 1.5\%$$

No values that could make a straight
    〇

Pair

Have 1 ⇒ 100

If you don't, 5 cards could make one,
so 15 outs with two tres

$$1 - \frac{31}{46} \cdot \frac{30}{45} = 55\%$$

Two Pair

Have 1 ⇒ 100

Have a pair ⇒ 9 outs 2 chances

$$1 - \frac{31}{46} \cdot \frac{36}{45} = 35.6\%$$

No pairs ⇒ need 2 sets

$$\binom{5}{2} \cdot \frac{4}{46} \cdot \frac{4}{45} = 7.7\%$$

Post flop Cont.

Set

Have $1 \Rightarrow 100\%$

Pair $\Rightarrow$ 2 chances, 2 outs

OR   2 chances need 2 of same matching

So

$$\left(1 - \frac{44}{48} \cdot \frac{42}{46}\right) + 3 \cdot \frac{3}{47} \cdot \frac{2}{46} = 13.33$$

4 of a Kind

Have One $\Rightarrow 100\%$

Have Set $\Rightarrow$ $1 - \frac{46}{47} \cdot \frac{45}{46} = 4.2\%$

Have Pair $\Rightarrow$ $\frac{2}{47} \cdot \frac{1}{46} = 0$

Turn Odds

Connor Wilson

Flush

Has 5 $\Rightarrow$ 100

Has 4 $\Rightarrow$ $\dfrac{9}{46}$

$\bigcirc$

Straight

Have 1 $\Rightarrow$ 100

4 to a straight $\Rightarrow$

In a Row $\dfrac{8}{46}$

Gut shot $\dfrac{4}{46}$

Flush

Pair

Have 1 $\Rightarrow$ 100

otherwise $\dfrac{18}{46}$

Set

Have 1 $\Rightarrow$ 100

Have Pair $\Rightarrow$ $\dfrac{2}{46}$

Have 2 Pair $\Rightarrow$ $\dfrac{4}{46}$

$\bigcirc$

4 of a kind ⇒

    Have 1 ⇒ 100

    have Set ⇒ $\frac{1}{46} = 2.05$