

# Package ‘RKelly’

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**Type** Package

**Title** Translate Odds and Probabilities

**Version** 1.0

**Description** Calculates the Kelly criterion (Kelly, J.L. (1956) <doi:10.1002/j.1538-7305.1956.tb03809.x>) for bets given quoted prices, model predictions and commissions. Additionally it contains helper functions to calculate the probabilities for wins and draws in multi-leg games.

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**Suggests** testthat, knitr, rmarkdown

**VignetteBuilder** knitr

**NeedsCompilation** no

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**Repository** CRAN

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chance\_to\_draw\_n\_games

*Calculates the chance to draw out of n matches*

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**Description**

Calculates the chance to draw out of n matches

**Usage**

```
chance_to_draw_n_games(p, n)
```

**Arguments**

p	probability of first (or second) player winning match
n	number of matches

**Value**

The decimal chance for a draw

**Examples**

```
chance_to_draw_n_games(0.4, 4) # Draw chance if one player has p=0.4 in four matches
```

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chance\_to\_win\_n\_games *Calculate win chance after multiple matches*

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**Description**

Chance of a player winning the majority of n matches. Draws count not as a win

**Usage**

```
chance_to_win_n_games(p, n)
```

**Arguments**

p	probability for player to win a single match
n	number of total matches played

**Value**

The decimal chance of winning a game

**Examples**

```
chance_to_win_n_games(0.55,5) # Chance for player with p=0.55 to win best of 5 matches
```

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kelly_back_dec	<i>Kelly for back bet</i>
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**Description**

Kelly for back bet

**Usage**

```
kelly_back_dec(price, p, commision_rate)
```

**Arguments**

price	Price to back in decimal odds
p	Probability of event to to materialise
commision_rate	Rate of commision charged on WINNINGS

**Value**

Kelly optimised fraction of stake relative to bank

**Examples**

```
kelly_back_dec(2,0.5,0.05)
```

---

kelly_criterion	<i>The Kelly criterion</i>
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**Description**

The Kelly criterion

**Usage**

```
kelly_criterion(p, alpha_w, alpha_l)
```

**Arguments**

p	The objective probability of the event
alpha_w	The return multiplier in case of the event happening
alpha_l	The return multiplier in case of the event not happening

**Value**

The Kelly optimised fraction of the bankroll that should be bet

**References**

Thorp, Edward O. (1997; revised 1998). The Kelly Criterion in Blackjack, Sports Betting, and the Stock Market. [http://www.eecs.harvard.edu/cs286r/courses/fall12/papers/Thorpe\\_KellyCriterion2007.pdf](http://www.eecs.harvard.edu/cs286r/courses/fall12/papers/Thorpe_KellyCriterion2007.pdf)

**Examples**

```
kelly_criterion(0.5,1,1)
```

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kelly_lay_dec	<i>Kelly for lay bet</i>
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**Description**

Kelly for lay bet

**Usage**

```
kelly_lay_dec(price, p, commision_rate)
```

**Arguments**

price	Price at which to lay
p	Base probability of event that is being laid
commision_rate	Rate of commision charged on WINNINGS

**Value**

Kelly optimised fraction of stake relative to bank

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