# Package: combinedevents (via r-universe)

August 31, 2024

**Title** Calculate Scores and Marks for Track and Field Combined Events

**Version** 0.1.1

**Description** Includes functions to calculate scores and marks for track
and field combined events competitions. The functions are based
on the scoring tables for combined events set forth by the
International Association of Athletics Federation (2001).

**License** GPL-3

**URL** https://katie-frank.github.io/combinedevents/,
https://github.com/katie-frank/combinedevents

**BugReports** https://github.com/katie-frank/combinedevents/issues

**Encoding** UTF-8

**LazyData** true

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.1.1

**Imports** lubridate, magrittr, rlang, stats, stringr

**Suggests** knitr, rmarkdown, testthat, spelling, covr

**Depends** R (>= 2.10)

**Language** en-US

**Repository** https://katie-frank.r-universe.dev

**RemoteUrl** https://github.com/katie-frank/combinedevents

**RemoteRef** HEAD

**RemoteSha** 1b3421937c0d7daac5a61a4d6cb0b0cc2bb08fcd

# Contents

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combinedevents-package

*combinedevents: Calculate Scores and Marks for Track and Field Combined Events*

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#### Description

The package includes functions to calculate scores and marks for track and field combined events competitions. The functions are based on the scoring tables for combined events set forth by the International Association of Athletics Federation (2001).

#### Author(s)

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#### References

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

#### See Also

Useful links:

- <https://katie-frank.github.io/combinedevents/>
- <https://github.com/katie-frank/combinedevents>
- Report bugs at <https://github.com/katie-frank/combinedevents/issues>

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combined_events *Combined events results*

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#### Description

combined_events() is a generic function used to present results of calls to scores() and marks().

#### Usage

```
combined_events(marks, scores, event_names, event, seconds, ...)
```

#### Arguments

| | |
|---|---|
| marks | a numeric vectors of marks |
| scores | an integer vector of scores |
| event_names | a character vector of event names |
| event | a character string indicating the combined events competition |
| seconds | a numeric (either 0 or 1) |
| ... | other arguments passed on to methods |

## Value

An object of class "combined_events". The default method returns a list of that class.

## See Also

scores(), marks()

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combined_events_null    *Combined events null results*

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## Description

combined_events_null() is a generic function used to present results of calls to scores() and marks() where in those calls combined_event = NULL.

## Usage

```
combined_events_null(marks, scores, event_names, seconds, ...)
```

## Arguments

| | |
|---|---|
| marks | a numeric vector of marks |
| scores | an integer vector of scores |
| event_names | a character vector of event names |
| seconds | a numeric (either 0 or 1) |
| ... | other arguments passed on to methods |

## Value

An object of class combined_events_null. The default method returns a list of that class.

## See Also

scores(), marks()

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dec                                    *Men's decathlon performances*

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### Description

A dataset containing the performances of 23 athletes in the men's decathlon at the 2016 Summer Olympics.

### Usage

```
dec
```

### Format

A data frame with 23 rows and 24 variables. The variables `100m`, LJ, SP, HJ, `400m`, `110mH`, DT, PV, JT, and `1500m` correspond to the performances of the athletes for the ten events comprising the decathlon. Those variables ending in _p (e.g., `100m_p`) represent the points athletes earn for their performances in each of the ten events. A full description of the 24 variables is below.

**rank** rank of athlete

**athlete** name of athlete

**nationality** nationality of athlete

**score_total** overall score

**100m** 100m result, in seconds

**100m_p** 100m points

**LJ** long jump result, in meters

**LJ_p** long jump points

**SP** shot put result, in meters

**SP_p** shot put points

**HJ** high jump result, in meters

**HJ_p** high jump points

**400m** 400m result, in seconds

**400m_p** 400m points

**110mH** 110m hurdles result, in seconds

**110mH_p** 110m hurdles points

**DT** discus throw result, in meters

**DT_p** discus throw points

**PV** pole vault result, in meters

**PV_p** pole vault points

**JT** javelin throw result, in meters

**JT_p** javelin throw points

**1500m** 1500m result, in the format mm:ss.ms

**1500m_p** 1500m points

## Source

[https://en.wikipedia.org/wiki/Athletics_at_the_2016_Summer_Olympics_%2D_Men%27s_decathlon](https://en.wikipedia.org/wiki/Athletics_at_the_2016_Summer_Olympics_%2D_Men%27s_decathlon)

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| marks | *Calculate marks for track and field combined events* |

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## Description

marks() calculates marks for track and field combined events competitions.

## Usage

```
marks(scores, gender, combined_event = NULL, seconds = FALSE)
```

## Arguments

| | |
|---|---|
| scores | a numeric vector of track and field scores |
| gender | gender of athlete; either "male" or "female" |
| combined_event | an optional character string indicating the combined events competition. For gender = "male", the options are "decathlon"/"outdoor decathlon", "outdoor pentathlon", "heptathlon"/"indoor heptathlon", and "indoor pentathlon". For gender = "female", the options are "heptathlon"/"outdoor heptathlon", "decathlon"/"outdoor decathlon", and "pentathlon"/"indoor pentathlon". If combined_event = NULL, the elements of scores must be named. |

        • For gender = "male", the allowed names for the elements of scores are `100m`, LJ, SP, HJ, `400m`, `110mH`, DT, PV, JT, `1500m`, `200m`, `60m`, `60mH`, and `1000m`.

        • For gender = "female", the allowed names are `100m`, LJ, SP, HJ, `400m`, `100mH`, DT, PV, JT, `1500m`, `200m`, `60mH`, and `800m`.

| | |
|---|---|
| seconds | a logical; if TRUE, will return all track event marks in seconds |

## Details

marks() performs the opposite action of [scores()](#): you give it the scores you want to obtain, and it gives you the marks you need to achieve those scores. For track events, marks() returns the slowest time needed to achieve the input score. Similarly, for jumping and throwing events, marks() returns the shortest distance necessary to achieve the input score.

For some events, when a score is given to marks(), the score returned may be different from the one input because some scores are not actually possible (due to rounding of track and field marks). When an impossible score is given to marks(), the function will return the closest higher score that corresponds to a mark.

**Value**

A list of class "combined_events" (or "combined_events_null" if combined_event = NULL) with the following fields:

| | |
|---|---|
| results | if called with non-NULL combined_event, a data frame with columns for the specified combined event containing the names of those events, mark for the resulting marks based on the input scores, and score based on the input scores. The last row of the data frame gives the total score for the specified combined events competition. If combined_event = NULL, a data frame with columns event, mark, and score. |
| marks | the vector of marks based on the input scores for the specified combined event. If not all scores were supplied to marks(), then there will be NA values for those events with missing scores. If combined_event = NULL, the vector of marks. |
| scores | the vector of scores for the specified combined event. If not all scores were supplied to marks(), then there will be NA values for those events with missing scores. If combined_event = NULL, the vector of scores. |
| score_total | if called with non-NULL combined_event, an integer representing the overall score for the specified combined events competition |
| call | the matched call |

**References**

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

**Examples**

```
# Men's heptathlon
marks(scores = rep(800, 7),
      gender = "male", combined_event = "heptathlon")

# Women's pentathlon
marks(scores = c(`60mH` = 981, HJ = 875, SP = 799, LJ = 956, `800m` = 1000),
      "female", "pentathlon")

# Men's events
marks(scores = c(LJ = 790, LJ = 810, HJ = 850, HJ = 900, PV = 900, PV = 915),
      "male")
```

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| scores | *Calculate scores for track and field combined events* |
|---|---|

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**Description**

scores() calculates scores for track and field combined events competitions.

**Usage**

```
scores(marks, gender, combined_event = NULL, seconds = FALSE)
```

## Arguments

| | |
|---|---|
| `marks` | a numeric or character vector of track and field marks/performances |
| `gender` | gender of athlete; either `"male"` or `"female"` |
| `combined_event` | an optional character string indicating the combined events competition. For gender = ″male″, the options are "decathlon"/"outdoor decathlon", "outdoor pentathlon", "heptathlon"/"indoor heptathlon", and "indoor pentathlon". For gender = ″female″, the options are "heptathlon"/"outdoor heptathlon", "decathlon"/"outdoor decathlon", and "pentathlon"/"indoor pentathlon". If combined_event = NULL, the elements of `marks` must be named. |

- For gender = ″male″, the allowed names for the elements of `marks` are `100m`, LJ, SP, HJ, `400m`, `110mH`, DT, PV, JT, `1500m`, `200m`, `60m`, `60mH`, and `1000m`.
- For gender = ″female″, the allowed names are `100m`, LJ, SP, HJ, `400m`, `100mH`, DT, PV, JT, `1500m`, `200m`, `60mH`, and `800m`.

| | |
|---|---|
| `seconds` | a logical; if TRUE, will return all track event marks in seconds |

## Value

A list of class `"combined_events"` (or `"combined_events_null"` if combined_event = NULL) with the following fields:

| | |
|---|---|
| `results` | if called with non-NULL `combined_event`, a data frame with columns for the specified combined event containing the names of those events, `mark` for the input marks/performances, and `score` for the resulting scores based on those marks. The last row of the data frame gives the total score for the specified combined events competition. If combined_event = NULL, a data frame with columns event, `mark`, and `score`. |
| `marks` | the vector of marks for the specified combined event. If not all marks were supplied to `scores()`, then there will be NA values for those events with missing marks. If combined_event = NULL, the vector of marks. |
| `scores` | the vector of scores based on the input marks for the specified combined event. If not all marks were supplied to `scores()`, then there will be scores with NA values for those events with missing marks. If combined_event = NULL, the vector of scores. |
| `score_total` | if called with non-NULL `combined_event`, an integer representing the overall score for the specified combined events competition |
| `call` | the matched call |

## References

International Association of Athletics Federation (2001). *IAAF Scoring Tables for Combined Events*.

## Examples

```
# Men's decathlon
scores(marks = c(`100m` = 11.61, LJ = 7.32, SP = 13.17, HJ = 1.9,
```

```
                     `400m` = 49.96, `110mH` = 15.32, DT = 38.18, PV = 4.6,
                     JT = 58.98, `1500m` = "4:39.34"),
           gender = "male", combined_event = "decathlon")

# Women's heptathlon
scores(c(14.11, 1.95, 13.96, 25.61, 6.44, 45.98, "2:07.26"),
       "female", "heptathlon")

# Men's events
scores(c(`60m` = 7.09, LJ = 7, LJ = 7.03, SP = 11.8, HJ = 2,
         `60mH` = 8.30, `60mH` = 9.31, PV = 4.30, `1000m` = "2:40.00"),
       gender = "male")
```

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