Package ‘valottery’

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Title Results from the Virginia Lottery Draw Games

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Description Historical results for the state of Virginia lottery draw games. Data were downloaded from https://www.valottery.com/.

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LazyData TRUE

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Description

Historical data for the CASH4LIFE game. Game play: Pick five different numbers from 1 through 60; then select one Cash Ball number from 1 through 4.

Usage

cash.4.life

Format

A data frame with 34 rows and 7 variables:

- **date**: date of draw
- **cashball**: cash ball result
- **N1**: 1st number in order
- **N2**: 2nd number in order
- **N3**: 3rd number in order
- **N4**: 4th number in order
- **N5**: 5th number in order

Source

https://www.valottery.com

Examples

```r
# Check numbers drawn are uniformly distributed
x <- qunif(ppoints(nrow(cash.4.life)*5),1,60)
y <- sort(unlist(cash.4.life[,3:7]))
qqplot(x,y)
```
## cash.5.1xday

**Cash 5 (once daily)**

### Description
Historical data for the Cash 5 once daily game. Game Play: Pick five numbers from 1 through 34. Note: On April 11, 1999, Cash 5 switched to twice daily drawings.

### Usage
`cash.5.1xday`

### Format
A data frame with 1187 rows and 6 variables:

- **date**  date of draw
- **N1**  1st number in order
- **N2**  2nd number in order
- **N3**  3rd number in order
- **N4**  4th number in order
- **N5**  5th number in order

### Source
[https://www.valottery.com](https://www.valottery.com)

## cash.5.2xday

**Cash 5 (twice daily)**

### Description
Historical data for the Cash 5 twice daily game. Game Play: Pick five numbers from 1 through 34. Note: On April 11, 1999, Cash 5 switched to twice daily drawings.

### Usage
`cash.5.2xday`
Format

A data frame with 11,164 rows and 7 variables:

- **date**: date of draw
- **time**: time of drawing: day or night
- **N1**: 1st number in order
- **N2**: 2nd number in order
- **N3**: 3rd number in order
- **N4**: 4th number in order
- **N5**: 5th number in order

Source

https://www.valottery.com

Examples

```r
max.days <- apply(subset(cash5.2xday,time="day",-(1:2)),1,max)
max.nights <- apply(subset(cash5.2xday,time="night",-(1:2)),1,max)
op <- par(mfrow=c(1,2))
hist(max.days)
hist(max.nights)
par(op)
```

---

**decades.of.dollars**  
*Decades of Dollars*

Description

Historical data for the Decades of Dollars game. You pick six (6) numbers, the Lottery will then select six (6) numbered balls. Note: This game was discontinued in favor of CASH4LIFE.

Usage

```r
decades.of.dollars
```

Format

A data frame with 443 rows and 7 variables:

- **date**: date of draw
- **N1**: 1st number in order
- **N2**: 2nd number in order
- **N3**: 3rd number in order
- **N4**: 4th number in order
- **N5**: 5th number in order
- **N6**: 6th number in order
Source

https://www.valottery.com

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mega.mill.1  
* Mega Millions (Before 10/22/13) *

Description

Historical data for the Mega Millions game. On October 22, 2013, the format changed from 5/56 + 1/46 to the current 5/75 + 1/15 format. Game play: Pick five different numbers from 1 through 75; then select one Mega Ball number from 1 through 15.

Usage

mega.mill.1

Format

A data frame with 1,713 rows and 7 variables:

- **date**  date of draw
- **megaball**  megaball result
- **N1**  1st number in order
- **N2**  2nd number in order
- **N3**  3rd number in order
- **N4**  4th number in order
- **N5**  5th number in order

Source

https://www.valottery.com

---

mega.mill.2  
* Mega Millions (10/22/13 and beyond) *

Description

Historical data for the Mega Millions game. On October 22, 2013, the format changed from 5/56 + 1/46 to the current 5/75 + 1/15 format. Game play: Pick five different numbers from 1 through 56; then select one Mega Ball number from 1 through 46.

Usage

mega.mill.2
Format

A data frame with 194 rows and 7 variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>date</td>
<td>date of draw</td>
</tr>
<tr>
<td>megaball</td>
<td>megaball result</td>
</tr>
<tr>
<td>N1</td>
<td>1st number in order</td>
</tr>
<tr>
<td>N2</td>
<td>2nd number in order</td>
</tr>
<tr>
<td>N3</td>
<td>3rd number in order</td>
</tr>
<tr>
<td>N4</td>
<td>4th number in order</td>
</tr>
<tr>
<td>N5</td>
<td>5th number in order</td>
</tr>
</tbody>
</table>

Source

https://www.valottery.com

$1,000,000 Money Ball

Description

Historical data for the $1,000,000 Money Ball game. Game Play: pick five numbers 1 - 35, the Lottery then selects five numbered balls. If the Gold Million Dollar Money Ball is drawn before all five numbers have been selected, the top prize jumps to $1,000,000. Note: This game was discontinued 8/29/15.

Usage

money.ball

Format

A data frame with 100 rows and 7 variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>date</td>
<td>date of draw</td>
</tr>
<tr>
<td>moneyball</td>
<td>money ball result: yes or no</td>
</tr>
<tr>
<td>N1</td>
<td>1st number in order</td>
</tr>
<tr>
<td>N2</td>
<td>2nd number in order</td>
</tr>
<tr>
<td>N3</td>
<td>3rd number in order</td>
</tr>
<tr>
<td>N4</td>
<td>4th number in order</td>
</tr>
<tr>
<td>N5</td>
<td>5th number in order</td>
</tr>
</tbody>
</table>

Source

https://www.valottery.com
Examples

```r
## probability of drawing money ball before first 5 balls
(1/36) + (1/35) + (1/34) + (1/33) + (1/32)
## observed money ball results
prop.table(table(money.ball$moneyball))
## simulate money ball draws before first 5 draws
set.seed(123)
mean(replicate(1000, any(sample(c(1:35,"mb"),5)=="mb")))
```

---

**pick.3.1xday**  
*Pick 3 (once daily)*

### Description

Historical data for the Pick 3 once daily game. Game Play: Pick a three digit number from 000 through 999. Note: On January 30, 1995, Pick 3 switched to twice daily drawings.

### Usage

```r
pick.3.1xday
```

### Format

A data frame with 1,777 rows and 4 variables:

- **date**  
  date of draw
- **N1**  
  1st digit
- **N2**  
  2nd digit
- **N3**  
  3rd digit

### Source

[https://www.valottery.com](https://www.valottery.com)

### Examples

```r
lapply(pick.3.1xday[-1],function(x)round(prop.table(table(x)),2))
```
Pick 3 (twice daily)

Description

Historical data for the Pick 3 twice daily game. Game Play: Pick a three digit number from 000 through 999. Note: On January 30, 1995, Pick 3 switched to twice daily drawings.

Usage

pick.3.2xday

Format

A data frame with 13,790 rows and 5 variables:

date  date of draw

time  time of drawing: day, night1 or night2 (Note: two nightly drawings were held on 10/30/08 and 11/09/08)

N1  1st digit
N2  2nd digit
N3  3rd digit

Source

https://www.valottery.com

Pick 4 (once daily)

Description

Historical data for the Pick 4 once daily game. Game play: Pick a four digit number from 0000 through 9999. Note: On January 30, 1995, Pick 4 switched to twice daily drawings.

Usage

pick.4.1xday
**Format**

A data frame with 1,041 rows and 5 variables:

- **date**: date of draw
- **N1**: 1st digit
- **N2**: 2nd digit
- **N3**: 3rd digit
- **N4**: 4th digit

**Source**

https://www.valottery.com

**Examples**

```r
## Any Pick 4 happen more than once?
results <- apply(pick.4.2xday[, -1], 1, function(x)paste(x, collapse = ""))
any(table(results) > 1)
## Which numbers?
i <- which(table(results) > 1, useNames = FALSE)
sort(table(results)[i], decreasing = TRUE)
```

**pick.4.2xday**  
*Pick 4 (twice daily)*

**Description**

Historical data for the Pick 4 twice daily game. Game play: Pick a four digit number from 0000 through 9999. Note: On January 30, 1995, Pick 4 switched to twice daily drawings.

**Usage**

`pick.4.2xday`

**Format**

A data frame with 13,788 rows and 6 variables:

- **date**: date of draw
- **time**: time of drawing: day or night
- **N1**: 1st digit
- **N2**: 2nd digit
- **N3**: 3rd digit
- **N4**: 4th digit

**Source**

https://www.valottery.com
Description

Historical data for the Power Ball game. Game play: Pick five different numbers from 1 through 59; then select one Powerball number from 1 through 35.

Usage

power.ball

Format

A data frame with 582 rows and 7 variables:

date  date of draw
powerball  powerball result
N1  1st number in order
N2  2nd number in order
N3  3rd number in order
N4  4th number in order
N5  5th number in order

Source

https://www.valottery.com

Examples

## According to game rules, the powerball is numbered 1 - 35,
## but apparently there were times when it went up to 39
i <- power.ball$powerball > 35
any(i)
sum(i)
power.ball$powerball[i]
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