dsmath-practice

1 4summarystatspractice.org

1.1 TODO Proportions

The built-in `quakes` data set gives the locations of 1000 seismic events of MB > 4.0. The events occurred in a cube near Fiji since 1964.

Obtain, rounded to two decimal places, the proportion of seismic events in the `quakes` data frame that occurred at a depth of 300 km or deeper.

1.1.1 Solution

Get an overview of `quakes` using `str`.

```
str(quakes)
```

```
round(mean(quakes$depth >= 300),digits=2)
```

Explanation: `quakes$depth>=300` is a logical vector. Its `mean` is the arithmetic average over all events that happened at a depth of 300 km or deeper. This is also the proportion of these events. The `round` function with a parameter `digits=2` rounds the result to 2 decimal places.

1.2 TODO Mean and median

Calculate the mean and median magnitudes of the events that occurred at a depth of 300 km or deeper.

1.3 TODO Identify statistical variables

The `InsectSprays` data set contains data on the number of insects found on various agricultural units, as well as the type of spray used on each unit.

Study the help file to get an idea of R's representation of the two variables.

```
head(InsectSprays)
str(InsectSprays)
```

Identify the two variable types in `InsectSprays` as per the definition of statistical variables:

- Variable _ is a _ variable …
- Variable _ is a _ variable …

1.4 TODO Mode

Calculate the modes of the distribution of insect counts, regardless of spray type.

1.5 TODO Counts

Use `tapply` to report the total insect counts by each spray type.

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