

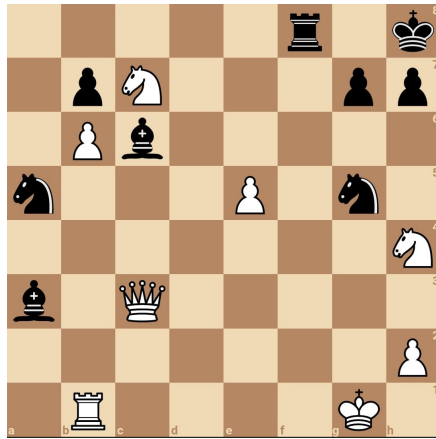
1 Harry's points

Harry managed to get some points for his house during his 7 years of education [1].

- Create a numerical vector, **positive**, of length 7, with the values 180, 430, 40, 0, 400, 50, and 0.
- Create a numerical vector, **negative**, of length 7, with the values 187, 10, 125, 90, 125, 90, and 0.
- Create a character vector, **schoolyear**, of length 7 with the words "year1", "year2", "year3", "year4", "year5", "year6", and "year7".
- Add those names to the vectors **positive** and **negative**.
- How many positive points did Harry make in total?
- How many positive points were awarded to Harry during his 3rd year?
- How many positive points were awarded to Harry during his last year?
- How many points did Harry lose on his first year?
- Which years did Harry get more than 150 points?
- Is the difference between the positive and the negative points statistically significant? You can assume the data is normally distributed (which is not true).
- Create a vector with the difference and compute its average and its standard deviation.
- Make a plot showing the positive points in blue, the negative points in red, and the difference in black.

2 Black wins in three moves

This chess puzzle was created by Jeremy Silman for the movie Harry Potter and the Philosopher's Stone [2].



- Create a character vector of length 6 with the names of the pieces of chess (See Lecture 1).
- Make a vector with the value of each chess piece (google them).
- Make a vector to count the pieces each player has (a big part of doing bioinformatics is to deal with the annoying formats of the data you receive).
- Which side would you pick: black or white? Ignore the fact that Ron is about to sacrifice himself so Harry can checkmate the king.

3 References

- [1] <https://www.wizardingworld.com/features/a-handly-history-of-hogwarts-house-points-infographic>
- [2] <https://www.youtube.com/watch?v=L7RIDfDG8wY>