

6.3: Algorithmic Complexity Crib Sheet

Finish the following sentences (the \_\_\_\_\_\_\_\_ indicates where you need to put your answer, in some cases, this represents more than just one word):

1. Algorithmic complexity is \_\_\_\_\_\_\_\_
2. We define complexity as function T(n) which is \_\_\_\_\_\_\_\_ vs \_\_\_\_\_\_\_\_
3. The complexity is used to \_\_\_\_\_\_\_\_
4. Algorithms will take different amounts of time with the same inputs depending on:
   1. \_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_
5. To overcome this issue, we measure T(n) as the number of \_\_\_\_\_\_\_\_
6. It is assumed that each step considered in algorithmic complexity takes a \_\_\_\_\_\_\_\_ time
7. Algorithmic complexity is useful for \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_ notation is used to represent algorithmic complexity
9. Worst-case runtime complexity is \_\_\_\_\_\_\_\_
10. Best-case runtime complexity is \_\_\_\_\_\_\_\_
11. Average-case complexity is \_\_\_\_\_\_\_\_

Complete the following table to have a record of the different types of algorithmic complexity:

| **Complexity** | **Notation**  ***(see answer to 8 above)*** | **Description** | **Example Algorithm**  ***(provide an example algorithm which has the complexity listed on each row)*** |
| --- | --- | --- | --- |
| Constant |  |  |  |
| Linear |  |  |  |
| Quadratic |  |  |  |
| Logarithmic |  |  |  |