



CSP2348/5243 Data Structures

Review Questions 01

Introduction to Data Structures and Remedial Mathematics

- 1 What are the differences between an algorithm and a program?
- 2 What are the features of a concrete data type?
- 3 Calculate 2^8 by hand in as many ways as you can find, then compare their efficiency in terms of multiplications.
- 4 Given $2^{10} \approx 10^3$, use power laws to prove that $2^{20} \approx 10^6$ and $2^{30} \approx 10^9$.
- 5 Apply *floor()* and *ceiling()* functions to $\log_2(70)$.
- 6 If $2^p < n < 2^{p+1}$, what should be the values of $\text{floor}(\log_2(n))$ and $\text{ceiling}(\log_2(n))$?