

Asymptotics

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You have been randomly assigned to teams. Work together to write a report crossing this first bridge on algorithmic quest.

Submit the team's report on Canvas. Include a task matrix indicating who did what.

Asymptotic Quest

After successful completion of these exercises you will understand the topic of *Asymptotics* and be able to explain and correctly answer questions about the topic.

The Pieces and their relationships

The pieces are functions which we will call f , g , and h , should we need others they can be named.

Standard relations include:

less than, equal, greater than, etc.

Relations can have properties such as:

Reflexing, Symmetric, Transitive

Quantifiers are also needed

For all, There exists...

Write precise (mathematical) definitions of the following relations:

1. Big-O:
2. Big- Ω :
3. Big- Θ :

Give examples of functions that satisfy these relations.

Explain how these relations describe bounds on running time (or other resources) expended when an algorithm is executed on input of size n .