

Negation of quantified sentences: logical issues

First activity - Translation of mathematics sentences

For each of the following sentences

A - Translate the sentence in your preferred language else than English.

B - Provide the negation of the sentence you have just translated.

C – Provide the negation of the sentence in English.

S1 - All the balls in the urn are red.

S2 - Some of the triangles in this tessellation are isosceles.

S3 - If a whole number is divisible by 4, then it ends in 4.

Second activity in small groups of 3 or 4 participants

Negation of definition in Physics and Computer science and links with proof

A - We recall the definition of *Uniform motion* in Physics

An object is said to have *uniform motion* when this object covers equal distance in equal interval of time within exact fixed direction.

Question - How would say that an object has not a uniform motion?

B - A graph G is defined by a set S of vertices and a set A of edges connecting two vertices.

Definition - An undirected graph $G = (S, A)$ is said to be connected *if and only if* whatever the vertices u and v of S are, there exists an edge connecting u to v .

C1- Complete - An undirected graph $G = (S, A)$ is connected *if and only if*

C2 - How would you prove that an undirected graph is not connected ?