Devos:

In my absence, something to keep you busy...

**HW07:**

Your mission: Write list comprehension-based Python functions for each:

* [**Union**](https://en.wikipedia.org/wiki/Union_(set_theory)) of the sets *A* and *B*, denoted *A* ∪ *B*, is the set of all objects that are a member of *A*, or *B*, or both. The union of {1, 2, 3} and {2, 3, 4} is the set {1, 2, 3, 4} .
* [**Intersection**](https://en.wikipedia.org/wiki/Intersection_(set_theory)) of the sets *A* and *B*, denoted *A* ∩ *B*, is the set of all objects that are members of both *A* and *B*. The intersection of {1, 2, 3} and{2, 3, 4} is the set {2, 3} .
* [**Set difference**](https://en.wikipedia.org/wiki/Set_difference) of *U* and *A*, denoted *U* \ *A*, is the set of all members of *U* that are not members of *A*. The set difference {1, 2, 3} \ {2, 3, 4} is {1}, while, conversely, the set difference {2, 3, 4} \ {1, 2, 3} is {4} . When *A* is a subset of *U*, the set difference *U* \ *A* is also called the [**complement**](https://en.wikipedia.org/wiki/Complement_(set_theory))of *A* in *U*. In this case, if the choice of*U* is clear from the context, the notation *Ac* is sometimes used instead of *U* \ *A*, particularly if *U* is a [universal set](https://en.wikipedia.org/wiki/Universal_set) as in the study of [Venn diagrams](https://en.wikipedia.org/wiki/Venn_diagram).
* [**Symmetric difference**](https://en.wikipedia.org/wiki/Symmetric_difference) of sets *A* and *B*, denoted *A* △ *B* or *A* ⊖ *B*, is the set of all objects that are a member of exactly one of *A* and *B* (elements which are in one of the sets, but not in both). For instance, for the sets {1, 2, 3} and {2, 3, 4} , the symmetric difference set is {1, 4} . It is the set difference of the union and the intersection, (*A* ∪ *B*) \ (*A* ∩ *B*) or (*A* \ *B*) ∪ (*B* \ *A*).
* [**Cartesian product**](https://en.wikipedia.org/wiki/Cartesian_product) of *A* and *B*, denoted *A* × *B*, is the set whose members are all possible [ordered pairs](https://en.wikipedia.org/wiki/Ordered_pair) (*a*, *b*) where *a* is a member of *A* and *b* is a member of *B*. The cartesian product of {1, 2} and {red, white} is {(1, red), (1, white), (2, red), (2, white)}.

Taken from [wikipedia](https://en.wikipedia.org/wiki/Set_theory)