1. [2 points] What is an invariant?

2. [2 points] What is the difference between a tuple and a list? Give two examples of operations that can be performed on one of these but not the other.
3. [3 points] Write a function `remove_first(s)` that takes a string argument and returns a string consisting of all character(s) of `s` except the first. Use an assert to enforce that the argument `s` is a non-empty string.

4. [3 points] Write a Python function `boolean_foo(x, y, z)` that is equivalent to the code shown below and uses only Boolean expressions (comparison operators, e.g., ==, !=, <, etc., and `not`, `and`, and `or`). Do not use if statements, looping constructs, assignment statements, try statements, etc.

```python
def foo(x, y, z):
    if x > y:
        if z == x:
            return True
        else:
            return False
    else:
        if z != y:
            return False
        else:
            return True
```