

Howework 1 – Advanced Java Programming

Claudio Maggioni

September 25, 2022

1 Exercise A

- 1: True
- 2: False (Required only if the class implements Comparable)
- 3: True
- 4: False (== for objects checks for reference equality)
- 5: False (it is indeed implemented by default - more precisely implemented in Object - but the default implementation checks reference equality only)
- 6: False (a child class of **Tiger** may include additional fields that are mutable. However, all properties and behaviour accessible via a reference of type **Tiger** type can be considered immutable)
- 7: False (the class itself is not public)
- 8: False (classes in the same package of **Tiger** can read the **name** field)
- 9: True (the constructor to implement must explicitly call **Tiger**'s constructor with **super**)
- 10: False (the declared type is **Number**, the runtime type is **Integer**)

2 Exercise B

- 1: False (the only “collection” data structure based over an unboxed primitive type is the array – however arrays are not **java.util** collections)
- 2: True (if the **hashCode()** return value changes after the mutation then the implementation of **HashMap** is unable to recognize it was inserted previously)
- 3: True
- 4: True
- 5: False (**finally** blocks are always evaluated)

3 Exercise C

- 1: True
- 2: False
- 3: True
- 4: True (more precisely, double dispatch or 'virtual table' invocations are used only for invoking the method in the class matching the object's dynamic type)
- 5: True (as the method called depends on the runtime or dynamic type of the caller object)