

CS2030 Programming Methodology
Semester 1 2023/2024

20 & 21 September 2023
Problem Set #4
Java Generics

1. Given the following declaration of variable `x`,

```
jshell> int x = 1  
x ==> 1
```

which of the following statements will result in a compilation error?

- | | |
|--------------------------------|-------------------------------|
| (a) <code>Integer i = x</code> | (f) <code>Double d = y</code> |
| (b) <code>int x = i</code> | (g) <code>double y = d</code> |
| (c) <code>double y = x</code> | (h) <code>Double d = x</code> |
| (d) <code>int x = y</code> | (i) <code>Double d = i</code> |
| (e) <code>Integer i = y</code> | |

2. For each of the code fragments below, indicate and explain the source of the error(s).

- (a) `List<? extends Object> list = new ArrayList<Object>()
list.add(new Object())`
- (b) `List<? extends Object> list = List.of("abc");
list.add("def");
String s = list.get(0);`
- (c) `List<? super Integer> list = new List<Object>();
list.add(new Object())`
- (d) `List<? super Integer> list = new ArrayList<int>();`
- (e) `List<? super Integer> list = new ArrayList();`
- (f) `List<?> list = new ArrayList<String>();
list.add("abc");`