

## HW8 Solutions

Total 29 points

Q1 8.1] **[5 points]** A static method 'belongs' to the class and not to an instance (object) of the class. A regular method belongs to an instance of the class. This means, if we try to call a regular method from a static method, it is impossible for the static method to figure out which instance's method is to be called - there could be many instances. On the contrary, no matter which regular method tries to call a static method, there is only one static method - at the class level. So the regular method can easily call a static method.

Q2 8.3] **[5 points]** Forever. This is an infinite loop as x is not being incremented.

Q3 8.4] **[5 points]** Error: method magic is ambiguous. Java is unable to figure out which method to invoke.

Q4 8.7] **[10 points]**

```
public static boolean isPalindrome(String text) {
    String newText = "";
    text = text.toLowerCase();
    for(int i=0; i< text.length();i++) {
        if (Character.isLowerCase(text.charAt(i))) {
            newText = newText+text.charAt(i);
        }
    }
    text = newText;
    for (int i=0; i< text.length()/2; i++) {
        if (text.charAt(i) != text.charAt(text.length() - i - 1))
            return false;
    }
    return true;
}
```

There could be other implementations. Please look for correctness.

Q5 10.1] **[4 points. 1 point each]**

Dynamite implementation - wrong (missing method parameter)

AtomicBomb implementation - correct

Grenade implementation - wrong (class declaration missing 'implements')

FireCracker implementation - wrong (scope cannot be reduced to private)