Programming Quiz Exercise 01:

1. Will the below program saved as `BadHello.java`, compile correctly, i.e. will there be any error on terminal when command invoked is `javac BadHello.java` give any error? Please note that there is no `main()` method.

```
public class BadHello {
   public static void BadHello(String[] args) {
     System.out.println("Hello, World");
   }
}
```

2. Assuming that above program compiles correctly, will running this like `java BadHello` work? If not, what kind of error it will provide?

3. Modify the above program as below. Will this program give error at compile time or at runtime or no error.

```
public class BadHello {
   public static void main() {
     System.out.println("Hello, World");
   }
}
```

4. Will the following program give error at compile time or at runtime or no error.

```
public class BadHello {
   public static void main(String args) {
     System.out.println("Hello, " + args);
   }
}
```

5. Will the following program give error at compile time or at runtime or no error.

```
public class BadHello {
   public static void main(String args) {
     System.out.println("Hello, " + args[0]);
   }
}
```

6. Will the following program give error at compile time or at runtime or no error.

```
public class BadHello {
   public static void main(String[] args) {
     System.out.println('Hello, World!' + args[0]);
   }
}
```

7. The below program `BadHello.java` compiles correctly. When it is invoked with command line arguments as `java BadHello java`, will it give any error. If yes, what kind of error? If not, then what will be the output?

```
public class BadHello {
   public static void main(String[] args) {
     System.out.println("Hello, World!" + args[1]);
   }
}
```

In the below questions, the program is modified only with third line and program compiles correctly. What will be the output that this line will produce when the program is run (for questions 9 to ??)

8. What will be the output of
```
System.out.println("100" + 10 );
```

9. What will be the output of
```
System.out.println(10 + 20 + "100" );
```

10. What will be the output of
```
System.out.println( "100" + 10 + 20 );
```

11. What will be the output of
```
System.out.println("100"  + (10 + 20));
```

12. What will be the output of
```
System.out.println(10 + 20 + "100" );
```

13. What will be the output of
```
System.out.println((float) (4/5));
```

14. What will be the output of
```
System.out.println((float) 4/5 );
```

15. What will be the output of
```
System.out.println((Math.sqrt(2) * Math.sqrt(2)) == 2.0 );
```

16. What will be the output of
```
System.out.println((int)(Math.sqrt(2) * Math.sqrt(2)) == 2.0 );
```

17. Given that 32768*32768 = 1073741824, What will be the output of
```
System.out.println(32768 * 65536);
```

18. Given that 32768*32768 = 1073741824, What will be the output of
```
System.out.println(65536 * 65536);
```

19. What will be the output of
```
System.out.println(0 / 0);
```

20. What will be the output of
```
System.out.println(0 / 0.0);
```

21. What will be the output of
```
System.out.println(0.0 / 0.0);
```

22. What will be the output of
```
System.out.println(1.0 / 0.0);
```

23. What will be the output of
```
System.out.println(1.0 % 0.0);
```

24. What will be the output of
```
System.out.println(4 ^ 4);
```

25. Consider that both x and y are int variables and are less than 32768. Identify the mathematical function (e.g. min(), average() etc.) which will give the same output as below statement
```
System.out.println((x + y + Math.abs(x - y))/2);
```