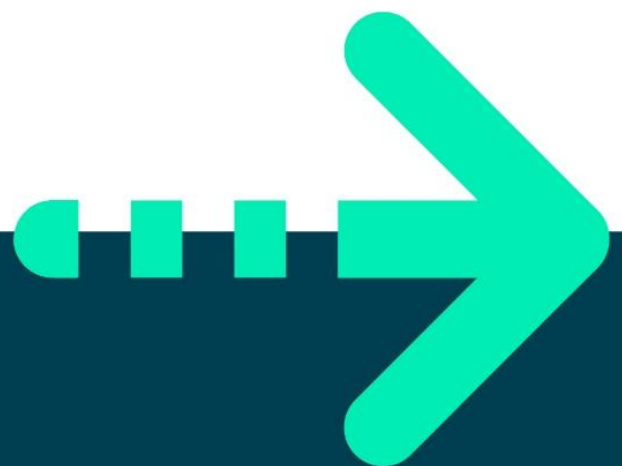




EXERCISE 1, FUNDAMENTALS RECAP





Exercise 1, Fundamentals – recap

Objective

This is a short quiz inviting you to spot possible errors in code fragments and make any comments you see fit.

Overview

Read each code fragment below and record your comments.

Step by step

1.

```
int x = 318;  
boolean isDivBy3 = x % 3;
```

2.

```
double d1 = 25.4, d2 = 36.3;  
int result = Math.sqrt((int)d1) + Math.sqrt((int)d2);
```

3.

```
int x = 3, y = 4;  
double average = (x + y)/2.0F;
```

4.

```
public void whatever(int Salary) {  
    double bonus = Salary * .05;  
    return bonus;  
}
```



5.

```
public int test(String s) {  
    if (s == "Fred") return 20;  
    else if (s != "Fred") return 40;  
    return 0;  
}  
  
int res = test("Fred");
```

6.

```
class Student {  
    public void m1(String x, int y) {}  
    public String m2(String x, int y) {return "";}  
    public void m3(String name, int age) {}  
  
    public static void m4(short s) {}  
    public static void m4(int i) {}  
}  
  
// which method is called in this client code?  
Student.m4(12);
```

7. What will be printed?

```
System.out.printf("%1$s is definitely %2$s. Very %2$s!",  
                  "Fred", "old");
```

8. What would this code do?

```
int value = 100;  
if (value <= 700) { System.out.println("A"); }  
if (value <= 500) { System.out.println("B"); }  
else { System.out.println("C"); }
```



9. What would the variable k contain?

```
String name = "fred";  
double k = (name.equals("Fred")) ? 15 : Math.sqrt(100);
```

10. What will be printed here?

```
for(int i = 0; i <= 10; i++) {  
    System.out.println("Current value of i is " + i++);  
}
```

11. What will be printed here?

```
int[4] ages;  
for(int i = 0; i < ages.length; i++) {  
    if (ages[i] == 0) {  
        System.out.println("Found an element that is 0");  
    }  
}
```

12.

```
String[,] names = new String[2][4];  
System.out.println(names.length);  
for(int i = 0; i < names[0].length; i++) {  
    System.out.println(names[0][i]);  
}
```



13. Would this compile? If so, what would be the person's name?

```
class Person {
    private String name;
    public void Person(String name) {
        this.name = name;
    }
    public void Person() {
        this.name = "Has no name";
    }
    ...
}

// client code

Person p1 = new Person("Fred");
Person p2 = new Person();
```

14. Fill in the dots! What variable names would you put?

```
class Person {
    // ctor here expects String,int,String
    public static String getDetails() {
        return String.format("%s\t%d\t%s", .., .., ..);
    }
}

Person p1 = new Person("Fred", 27, "PE Teacher");
System.out.println(p1.getDetails());
```

15. Does the following code compile?

```
class Person {
    private int retAge = 65;
    private int age = 34;

    public static int yearsToRetirement() {
        return retAge - age;
    }
}
```



16. Would this code compile? Please note, Car is public and Engine is not. What kind of visibility does Engine has in this package? What visibility would it have in other packages?

Can you create an Engine object (instance) in another package?>

```
public class Car {  
    private Engine eng = new Engine();  
    public Engine getEngine() { return eng;}  
}  
class Engine {  
    public Engine() { /* set up engine */ }  
}
```

17. What would this code print?

```
String s = "    Freddie    ";  
s.trim().toUpperCase().substring(1,3);  
System.out.println(s + " is my best colour");
```

- 18.

```
...  
ArrayList<Car> cars = new ArrayList<>();  
cars.add(new Car("Ford"));  
String model = cars[0].getModel();
```

19. What would this code print?

```
String data = "aeiou";  
for(char c : data.toCharArray()) {  
    System.out.println(c + '-' + "is a vowel");  
}
```

