(1) What is the text that is printed to the screen when this code is run?
```java
int sum = 4 + 6;
if (sum < 10 && sum > 0) {
    System.out.println("Within range.");
} else {
    System.out.println("Out of range.");
}
```

- a) Within range.
- b) Out of range.
- c) Within range.
- d) Nothing is printed to the screen.

(2) What is the text that is printed to the screen when this code is run?
```java
int sum = 4 + 6
if (sum <= 10 && sum > 0) {
    System.out.println("Within range.");
} else {
    System.out.println("Out of range.");
}
```

- a) Within range.
- b) Out of range.
- c) Within range.
- d) Nothing is printed to the screen.

(3) Given this block of Java-like code, describe in English when each of code blocks a-d would execute:
```java
if(booleanExpressionX) {
    //code block a
    //Executes when X is true
}
else if (booleanExpressionY) {
    //code block b
    //Executes when X is false and Y is true
}
else if(booleanExpressionZ) {
    //code block c
    //Executes when X and Y are false and Z is true
}
else {
    //code block d
    //Executes when X and Y and Z are false
}
```

(4) Describe in English what values of x would make the following expressions true.
- a) x > 0 when x is greater than 0
- b) x != 0 when x is not equal to 0
- c) x < 0 when x is less than 0
d) $x == 0$ when $x$ is equal to 0

(5) Given this block of Java-like code, describe in English when each of code blocks a-d would execute:

```java
if(booleanExpressionX) {
    // code block a
    // Executes when X is true
}
else {
    // code block b
    // Executes when X is false
}

if(booleanExpressionY) {
    // code block c
    // Executes when Y is true (the value of X does not matter)
}

if(booleanExpressionZ) {
    // code block d
    // Executes when Y is true and Z is true (X’s truth irrelevant)
}
```

(6) Given this block of Java-like code, describe in English when each of code blocks a-d would execute:

```java
if(booleanExpressionX) {
    // code block a
    // Executes when X is true
}

if(booleanExpressionY) {
    // code block b
    // Executes when Y is true (X can either be true or false)
}

if(booleanExpressionZ) {
    // code block c
    // Executes when Z is true (X and Y can either be true or false)
}
else {
    // code block d
    // Executes when Z is false (X and Y can either be true or false)
}
```

(7) Write the method definition for a method named myMethod that takes as a parameter a Ball and returns a Shape object. You can leave the body of the method empty.

```java
public Shape myMethod(Ball ball) {
}
```

(8) Write the method definition for a method named getSize that does not take any parameters, but does return a Dimension object. You can leave the body of the method empty.

```java
public Dimension getSize() {
```
(9) Write the method definition for a method named print16 that has a void return type and takes no parameters. Inside the method, write a loop that would print out the numbers 1 to 16.

```java
public void print16() {
    for (int count = 1; count <= 16; count++) {
        System.out.println(count);
    }
}
```

(10) Use the following for-loop definition to answer parts a – d. Parts e & f do not use the same code.

```java
for (int count = 1; count < 9; count++) {
    System.out.println(count);
}
```

a) What is the initial value of this loop’s counter variable? 1
b) What is the value of this loop’s counter variable when the loop is done executing? 9
c) Circle the part of the code above that is considered the loop body.
d) How many times would this loop execute? 8