

(1) What is the text that is printed to the screen when this code is run?

```
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.

Out of range.

d) Nothing is printed to the screen.

(2) What is the text that is printed to the screen when this code is run?

```
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.

Out of 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:

```
if(booleanExpressionX) {
    //code block a
}
else if (booleanExpressionY) {
    //code block b
}
else if(booleanExpressionZ) {
    //code block c
}
else {
    //code block d
}
```

(4) Describe in English what values of x would make the following expressions true.

a) $x > 0$

b) $x \neq 0$

c) $x < 0$

d) $x == 0$

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

```
if(booleanExpressionX) {
```

```

    //code block a
}
else {
    //code block b
}

if(boolean ExpressionY) {
    //code block c

    if(booleanExpressionZ) {
        //code block d
    }
}

```

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

```

if(booleanExpressionX) {
    //code block a
}
if(booleanExpressionY) {
    //code block b
}

if(boolean ExpressionZ) {
    //code block c
}
else {
    //code block d
}

```

(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.

(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.

(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.

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

```

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

```

- What is the initial value of this loop's counter variable?
- What is the value of this loop's counter variable when the loop is done executing?
- Circle the part of the code above that is considered the loop body.
- How many times would this loop execute?