

## Quiz 5 - Winter 2013

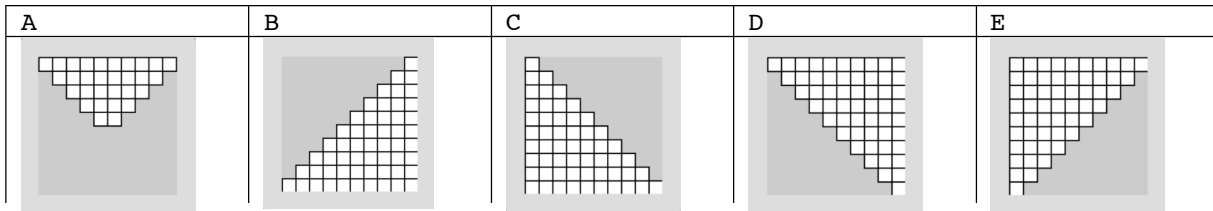
- What is the first value printed by the program to the right?  
A. -1 B. 5 C. 6 D. 7 E. 15
- What is the second value printed by the program to the right?  
A. -1 B. 5 C. 6 D. 7 E. 15

```
void setup() {
  int[] data = {
    7, 10, 3, 10, 6, 7, 15, 10, 10
  };
  System.out.println(func1(15, data));
  System.out.println(func1(5, data));
}

int func1(int x, int[] data) {
  for (int i = 0; i < data.length; i++)
    if (data[i] == x)
      return i;
  return -1;
}
```

- Which image is the result of the following program?  

```
void setup(){
  for(int y=0; y<100; y=y+10) {
    for(int x=width-y-10; x<100; x=x+10) {
      rect(x, y, 10, 10);
    }
  }
}
```



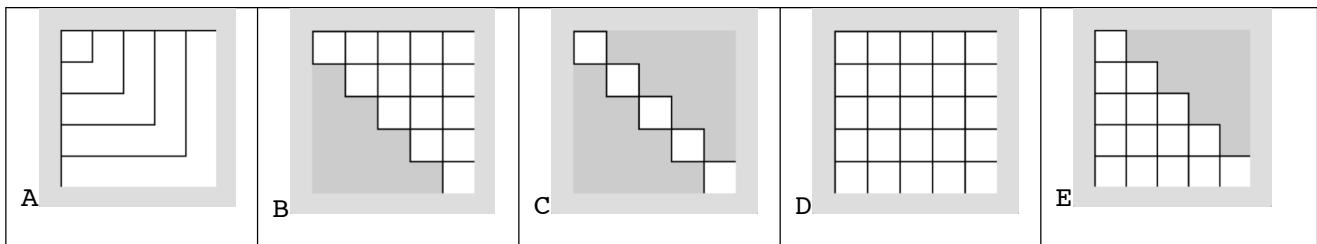
- What does the following program print?

```
int x = 9, y;
void setup() {
  y = timesTwo(x);
  println(x + " " + y);
}
int timesTwo(int x){
  x = x * 2;
  return x;
}
```

A. 9 18
B. 18 18

- Which image below corresponds to the image produced by the program below?

```
for (int x = width; x >= 0; x = x - 20) {
  for (int y = height; y >= 0; y = y - 20) {
    if (x == y) {
      rect(x, y, 20, 20);
    }
  }
}
```



6. Given the array declaration `int[] scores = new int[70]`; fill in the blank so the print statement prints what is stored in the last element of the array: `println(_____);`?  
A. `scores[69]` B. `scores[70]` C. `scores[71]` D. `scores.last` E. `last(scores)`

7. What is the last line printed by the program to the right?

- a. `func1 100`
- b. `func1 102`
- c. `func1 120`
- d. `func1 1020`
- e. `func1 1200`

```
void setup() {
    func1(func2(func3(10)));
}
void func1(int x) {
    println("func1 " + x);
}
int func2(int x) {
    println("func2 " + x);
    return x*10;
}
int func3(int x) {
    println("func3 " + x);
    return 2+func2(x);
}
```

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The remaining questions are all about the following program.

```
// Create a class to represent a light bulb that can be
// positioned, sized, and turned on and off.
Light light1, light2, light3;
void setup() {
    size(400, 400);
    light1 = new Light(25, 25); // Put a light at (25, 25)
    light2 = new Light(width-30, height-60, false); // initially off
    light3 = new Light(width/2, height/2, 50); // specifically size to be 50
}
void draw() {
    light1.show();
    light2.show();
    light3.show();
}
void mousePressed() {
    if (light1.clicked()) {
        light1.toggle();
    }
    if (light2.clicked()) {
        light2.toggle();
    }
    if (light3.clicked()) {
        light3.toggle();
    }
}
```

8. How many methods NOT counting constructors must the `Light` class have for the program above?  
A. 1 B. 3 C. 5 D. 8 E. 9
9. How many constructors must the `Light` class have for the program above?  
A. 0 B. 1 C. 2 D. 3 E. 4
10. How many instance variables must the `Light` class have?  
A. 2 B. 3 C. 4 D. 5 E. 6