Quiz 3 solution

27 February 2013

1. **Carefully trace the following algorithm. What does it output? Be sure to mark a section of your answer as the *output,* separate from your scratch work.**

```
step 1. Let N be 8
step 2. Set I to 1
step 3. If I > N then stop.
step 4. If I < 4 or I is odd, then output I
step 5. Set I to I+1
step 6. Go back to step 3.
```

- N: 8
- I: ~~1 2 3 4 5 6 7 8~~ 9
- Output:

```
1
2
3
5
7
```

2. **For each type of statement below, indicate which step(s) from the algorithm in question 1 contain that type of statement.**

   a. Output: step 4 contains output.

   b. Variable assignment: steps 1, 2, 5 involve variable assignment.

   c. Conditional: steps 3 and 4 are conditionals.

   d. Loop: step 6 creates a loop.

3. **Below is an illustration of an array and two other variables. What are the values of each of the following expressions?**

   a. `A[0] = 3`

   b. `A[X] = A[2] = 4`

   c. `A[Y]+1 = A[5]+1 = 7+1 = 8`

   d. `A[X+1] = A[2+1] = A[3] = 0`
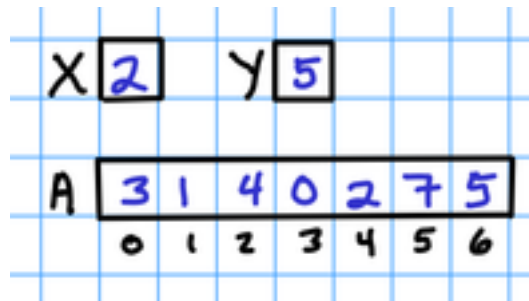
   e. `A[A[2]] = A[4] = 2`

Figure 1: