16.216: ECE Application Programming
Spring 2014

Lecture 13: Key Questions
February 24, 2014

1. In what cases are `for` loops useful? Describe the basic structure of a `for` loop.

2. Describe the operators that allow you to directly modify a variable without writing a
    full assignment statement.

3. Explain the difference between pre- and post-increment or decrement operators.

4. **Example:** What does the following program print?
    ```
    int n = 5;
    printf("n = %d\n", ++n);
    printf("Now, n = %d\n", n++);
    printf("Finally, n = %d\n", n);
    ```

5. **Example:** What does each of the following print?

a.
```c
for (i = 5; i < 40; i += 8)
{
    printf("%d ", i);
}
```

b.
```c
for (i = -5; i < -10; i--)
{
    printf("%d ", i);
}
```

c.
```c
for (i = 10; i <= 100; i = i+10)
{
    if (i % 20)
        printf("%d ", i);
}
```

d.
```c
for (i = 5; i < 10; i += i%2)
{
    printf("%d ", i++);
}
```

Finishing PE2: Flowchart/code for n!

Finishing PE2: Flowchart/code for 2^n