

Practice midterm

23 October 2013

1. The following program just uses variables. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    int lisa = 5;
    double bart = 5 / 2.0;
    lisa++;
    int maggie = lisa / 2;
    maggie *= 3;
    cout << lisa << ", " << bart << ", " << maggie << "\n";
    return 0;
}
```

2. The following program uses conditions. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    int bilbo = 9;
    int frodo = 3;
    if(bilbo % 2 == 0)
    {
        frodo *= 2;
        bilbo++;
    }
    else
    {
        bilbo--;
        frodo *= 4;
    }
    cout << bilbo << ", " << frodo << "\n";
    return 0;
}
```

3. The following program uses a switch. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    int bill = 9;
    int ted = bill - 4;
    switch(ted)
    {
        case 3: cout << "ant ";
        case 2: cout << "bee "; break;
        case 5: cout << "cat ";
        case 4: cout << "dog "; break;
        default: cout << "eel ";
    }
    cout << "\n";
    return 0;
}
```

4. The following program uses a while loop. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    int tux = 29;
    while(tux > 0)
    {
        cout << (tux % 3);
        tux /= 3; // Hint: INTEGER division
    }
    cout << "\n";
    return 0;
}
```

5. The following program uses a for loop. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    for(int i = 1; i < 40; i *= 3)
    {
        cout << i << "\n";
    }
    return 0;
}
```

6. The following program uses *nested if/else* statements. Given the values of `baz` and `tar` as inputs, what does the program output?

- `baz = 6; tar = 3; Output: _____`
- `baz = 3; tar = 6; Output: _____`
- `baz = 6; tar = 9; Output: _____`
- `baz = 9; tar = 6; Output: _____`
- `baz = 3; tar = 4; Output: _____`

```
#include <iostream>
using namespace std;
int main()
{
    int baz, tar;
    cin >> baz >> tar; // Receives values as shown above
    if(baz > 4)
    {
        if(baz > 8)
        {
            cout << "Austria ";
        }
        if(tar < 8)
        {
            cout << "Belgium ";
        }
        cout << "Chile ";
    }
    else
    {
        cout << "Denmark ";
        if(tar < 6)
        {
            cout << "Egypt ";
        }
    }
    cout << "France\n";
    return 0;
}
```

7. The following program uses *nested* loops. What does the program output?

```
#include <iostream>
using namespace std;
int main()
{
    for(int i = 1; i < 4; i++)
    {
        for(int j = i; j < 5; j++)
        {
            cout << j << " ";
        }
        cout << "\n";
    }
    return 0;
}
```