

Worksheet – ADDS (Week 1 Lecture 3)

Determine the outcome for the following code segments. You should be able to explain the reason for the outcome.

Q1.

```
#include <iostream>
using namespace std;
```

```
int main () {
    int x, *xp;
    double y, *yp;
    char z, *zp;
```

```
class{
    int temp[1000];
} c, *cp;
```

```
cout<<sizeof(x)<<endl;
cout<<sizeof(y)<<endl;
cout<<sizeof(z)<<endl;
cout<<sizeof(c)<<endl;
```

```
cout<<sizeof(xp)<<endl;
cout<<sizeof(yp)<<endl;
cout<<sizeof(zp)<<endl;
cout<<sizeof(cp)<<endl;
```

```
cout<<sizeof(*xp)<<endl;
cout<<sizeof(*yp)<<endl;
cout<<sizeof(*zp)<<endl;
cout<<sizeof(*cp)<<endl;
```

```
}
```

Q2

```
#include <iostream>
using namespace std;
```

```
int main () {
    int p;
    double d;
```

```
int *xp = &p;
double *yp= &d;
```

```
class {
    int temp[1000];
} c1, *cp=&c1;
```

```
cout << "xp: " << xp << endl;
cout << "xp+1: " << xp+1<< endl;
```

```

cout << "yp: " << yp << endl;
cout << "yp+1: " << yp+1 << endl;
cout << "cp: " << cp << endl;
cout << "cp+1: " << cp+1 << endl;

}

```

Q3.

```

#include <iostream>
using namespace std;

```

```

int main () {
    int a[3] = {2012, 2, 14};
    int* p1 = &a[0];
    int* p2 = a;

    cout << "a: " << a << endl;
    cout << "a+1: " << a+1 << endl;

    cout << "*(a+2): " << *(a+2) << endl;

    *(a+2) = 3;
    cout << "New *(a+2): " << *(a+2) << endl;
    cout << "*(a+3): " << *(a+3) << endl;

    *(a+3) = 0xbfff37c;

}

```

Q4

```

#include <iostream>
using namespace std;

```

```

int main () {
    char s1[] = "abc";
    char *s2 = "def";
    char *p1 = s1;

    cout << "*p1 " << *p1 << endl;
    s1[0] = 'z';
    cout << "New *p1 " << *p1 << endl;
    s2 += 1;
    cout << "New *s2 " << *s2 << endl;
    p1 += 1;
    cout << "New *p1 " << *p1 << endl; }

```