

Homework # 1

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Solve the following problems with Z3.

1. Check whether the outputs of the following two functions are always the same.

```
int f(int y) {
    int x, z;
    z = y;
    y = x;
    x = z;
    return x * x;
}
```

```
int g(int x) {
    return x * x;
}
```

2. Prove the validity of the `assert` statement. Prove the same with 25 replaced by 18.

```
int i = 0, j = 1 ;
while(i < 10) {
    i = i + 1;
    j = j + 2;
}
assert(j < 25);
```