

ENG236 Computer Programming
Solution to **bonus** Quiz 12 (19 November 2009)

Instructions: open book, 30 minutes

1. (150 marks) Consider the following C++ program and fill in the missing elements in parts A-D.

```
#include <iostream>
using namespace std;
class CAT
{public:
    CAT() {itsAge = 1;}
    ~CAT(){;}
    int GetAge() const {return itsAge;}
    void SetAge(int age) {itsAge = age;}
private:
    int itsAge;
};

int main()
{
    CAT **ptr = new CAT *[10];

    // Part A: Create 10 CAT objects and store the pointers in the
    // respective array elements in the array pointed to by ptr.
    for (int i=0; i<10; i++)
        *(ptr+i) = new CAT;

    // Part B: Set the ages of the 10 CAT objects by consecutive
    // integer, starting from 0.
    for (int i=0; i<10; i++)
        (*(ptr+i))->SetAge(i);

    // Part C: Print out the ages of all 10 CAT objects.
    for (int i=0; i<10; i++)
        cout << (*(ptr+i))->GetAge() << endl;

    // Part D: Remove all the memories allocated in the free store.
    for (int i=0; i<10; i++)
        delete *(ptr+i);
    delete [] ptr;

    return 0;
}
```