Student Name: _____ Student ID: _____

ENG236 Computer Programming
Quiz 9 (12 November 2009)

Instructions: open book, 25 minutes

(120 marks) Consider the following C++ program and fill in the following missing elements.

```
#include <iostream>
using namespace std;
enum COLOR {RED, BLUE, GREEN, WHITE, BLACK};
class Cat
{
public:
   // Part A: Declare and implement three constructors:
   // o The first one creates a Cat object with age of 0 and white color.
   // o The second one creates a Cat object with a configurable age and
   //   white color.
   // o The third one creates a Cat object with a configurable age and a
   //   configurable color.
   Cat() {itsAge = 0; itsColor = WHITE;}
   Cat(int age) {itsAge = age; itsColor = WHITE;}
   Cat(int age, COLOR color){itsAge = age; itsColor = color;}
   int GetAge() const {return itsAge;}
   COLOR GetColor() const {return itsColor;}
   void SetAge(int age) {itsAge = age;}
   void SetColor(COLOR color) {itsColor = color;}
private:
   int itsAge;
   COLOR itsColor;
};

int main()
{
    // Part B: Create three Cat objects in the free store:
    // o cat1 points to the first cat with age of 0 and white color.
    // o cat2 points to the second cat with age of 1 and white color.
    // o cat3 points to the third cat with age of 2 and black color.
    // Note: You cannot invoke public functions other than the constructors.
    Cat *cat1 = new Cat;
    Cat *cat2 = new Cat(1);
    Cat *cat3 = new Cat(2,BLACK);

    // Part C: By using only an additional pointer pcat to make
    // o cat1 points to the second cat,
    // o cat2 points to the third cat,
    // o cat3 points to the first cat,
    Cat *pcat;
    pcat = cat1;
    cat1 = cat2;
    cat2 = cat3;
    cat3 = pcat;

    // Part D: Delete the memory allocated in the free store.
    delete cat1, cat2, cat3;

    return 0;
}
```