These questions are about a class called Duration

class Duration {

 int hours;

 int minutes;

 // Lots of methods here

};

1) On which line is the destructor called for ‘d’ called?

 void foo() {

 for(int j = 0; j < 10; j++)

 {

 d = new Duration(j);

 cout << d << endl;

 }
 }

2) Which of these invokes the copy constructor? Assume all necessary functions exist. (Choose all that apply)

 Duration f1 = f2; Duration f3(10); Duration f4 = f5 + f6; f7 = f8;

3) Which of these invokes the operator=? Assume all necessary functions exist. (Choose all that apply)

 Duration f1 = f2; Duration f3(10); Duration f4 = f5 + f6; f7 = f8;

4) Which of these is a reasonable signature for the less than operator overload?

 int operator<(bool rhs)
 bool operator<(int rhs)

 Duration operator<(int rhs)
 bool operator<(const Duration &f)

 bool operator<(int lhs, Duration &f)
 friend Duration operator<(int lhs, bool rhs)
 friend bool operator<(int lhs)

5) I want to add two Duration. I want ‘+’ to work. What’s a reasonable signature for the method to add “f3 = f1 + f2”?

 int operator+(Duration &lhs, Duration &rhs)
 int operator+(Duration lhs, Duration rhs)

 friend int operator+(Duration &lhs, Duration &rhs)

 Duration &operator+(Duration &rhs)

6) Suppose I don’t have an operator= for Duration. Choose one

 f1 = f2 does not compile

 f1 = f2 does compile, and does a shallow copy

 f1 = f2 does compile, and does a deep copy

7) (choose one) Should the class Duration have a destructor, or is the default destructor good in this case?

1) Which takes more space (i.e. more RAM)

 an array declared to hold 100 items

 a linked list holding 100 items

 equal

2) Which takes longer to run (i.e. more CPU time)

 deleting an item from the head of the list

 deleting an item from the tail of the list

 equal

3) Which takes longer to run (i.e. more CPU time)

 inserting an a single item into the head of a list of 100 items

 inserting an a single item into the head of a list of 10,000 items

 equal

4) Which takes longer to run (i.e. more CPU time)

 inserting an a single item into the tail of a list of 100 items

 inserting an a single item into the tail of a list of 10,000 items

 equal

5) What is the difference between a deep copy and a shallow copy?

class Node {

 int item;

 Node \*next;

 // Lots of methods here
}

6) Write code that prints data of the the SECOND TO LAST item in the linked list. You may assume the list has at least 1,000 items.

7) Write code that decides if the list is in ascending order. Print “Yes” or “No”.