Midterm 1: Practice Multiple-choice questions

Question 1

Which one of the following statement is false?

a. Accessing an element in an array is generally slower than in a linked list

b. Linked lists generally occupy more space than arrays

c. Adding an element in the middle of a medium-sized array is generally slower than a linked list

d. Inserting an element in the middle of a linked list is generally faster than an array

Question 2

Which of these data structures would be the most useful when storing information on all eight planets in our solar system, knowing that the program will need to access this information many times in no particular order?

a. Stack

b. Queue

c. Dynamically doubling array

d. Fixed size array

Question 3

Using a dynamically doubling array with an initial capacity of 20, how many resizing operations would be required to accommodate 1000 elements?

a. 4

b. 5

c. 6

d. 7

Question 4

What will be printed when the following code is run?

```
Queue q; // initialized to be empty

q.enqueue(1);
q.enqueue(6);
q.enqueue(4);
q.enqueue(8);

q.dequeue();
q.dequeue();

cout << q.peek_front();
q.dequeue();
cout << q.peek_front();
q.enqueue(7);
cout << q.peek_front();
```

a. 4 8 8

b. 4 8 7

c. 6 1 7

d. 6 1 1

Question 5

Which of the following is *not* a difference between static and dynamic memory?

a. Dynamic memory doesn’t obey normal scoping rules

b. Static variables have names, while dynamic variables do not

c. Pointers can only be allocated dynamically

d. Dynamic memory is allocated using the *new* keyword, while static memory is not