

1. Write a statement to create a dynamic array of integers of size 5 using `new` operator in C++?
2. Write a statement to create a dynamic array of pointers (to) integers of size 5 using `new` operator in C++?
3. State True or false. A destructor is called when a program that declares an object of a class ends.
4. State True or false. While both `new` operator and `malloc` function can be used for dynamic memory allocation, the `new` operator calls the constructor but `malloc` does not.
5. State True or False. A `friend` function can access all the private, protected and public members of a class.
6. Given a class `A` as defined below:

```
class A{
    int x;
    int y;
    public:
    void disp();
}
```

Define a destructor (within the class) that displays the message "Object destroyed"

7. Given the following declaration of the class `Foo`, which of the following are valid ways to construct an object of class `Foo` (note the difference between parenthesis and curly braces)

```
class Foo
{
    public:
    int i = 0;

    Foo(int x):i(x){}
};
```

- (a) `Foo f;`
- (b) `Foo f{};`
- (c) `Foo f(1);`
- (d) `Foo f(Foo(1));`

8. Define a class `complex` to maintain complex numbers of the form  $a + ib$ . The class should contain the following members:
  - Integer data members `a` and `b`.
  - A constructor with zero arguments and default values set to 1;
  - A constructor with two arguments.
  - A Friend function `void addComplexNums(complex, complex)` function that takes two complex numbers as arguments and displays their sum.

