# M4 Short Answers

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### T1.

the new operator in c++ is a operator and malloc is a function in c. Using the new operator, the complier will automatically decide the size the datatype we want to allocate. However, we have to specify the specific size of the data in the malloc function in c.

### T2.

XXX.h

class temp

{

public:

...

DynamicIntArray( const DynamicIntArray& rhs );//this is a copy constructor. in the .h file

...

}

NOTE: abc here is a class

* the copy constructor take the reference of an object of the class as its rhs parameter.
* In the main code: abc a(d). This is code constructor invoked to pass d, d is an object.
* Initialization: abc a = d. This is copy constructor in initialization.

### T3.

NOTE: abc here is a class

* copy constructor: We consider it as copy constructor when we initialize the object like this: abc a = d.The copy constructor is creating the duplicate variable. the copy constructor is used in following situation:
  + When a class object is passed to a function by value
  + When a function must return a class object as its result
  + When one object is declared and initialized to an existing object
* overloaded assignment operator: abc a,b; b = abc(); a = b//this here is a overloaded assignment operator. The operator = is assigning to a value to an existing target variable.

### T4.

the copy constructor is used in following situations:

* When a class object is passed to a function by value
* When a function must return a class object as its result
* When one object is declared and initialized to an existing object

### T5.

because we overload the operator [] for the class. So the operater [] is possible for use in our new class and its object. And in the implentation the for the operater [] overload, we apply the [] to the int[] datatype which supports operater [].