

## Chapter 2

### Short Answer:

1. What is an identifier?
2. What would be the best choice for the data type for a person's middle initial?
3. What would be the best choice for the data type for the distance between two houses?
4. What is the following kind of statement called?  
`int counter;`
5. What is a prompt?
6. What is the result of the following arithmetic expression?  
 $5 + 7/3$
7. What is the result of the following arithmetic expression?  
 $7 - 2 * (4 + 1)$

## Chapter 3

### Short Answer:

1. What is top-down design?
2. In the function definition  
float aValue (int r, int s) {.....  
what are r and s called?
3. The program that you write to test a function is called a(n) \_\_\_\_\_.
4. The region in a program where a particular name is visible or can be referenced is called the name's \_\_\_\_\_.
5. What is the only type of function that does not have to end with a return statement?

### Multiple Choice:

6. What is the output of this line of code, given the following definition?  
cout << aNumber (2, 5);      // code in main  
  
**int** aNumber (**int** x, **int** y) {    // function definition  
    **return** (2 \* x - y);  
}
- a) -6  
b) -1  
c) 6  
d) 8
7. What is the output of the following line of code, given the function definition that follows:  
    cout << calc (1, 2) + calc (2,3);      // code in main

```
int calc (int x, int y)           // function definition
{
    x = x + 1;
    return x % y;
}
```

- a) 0
  - b) 1
  - c) 2
  - d) none of the above
8. What would be the output of the following lines of code?
- ```
string word = "somebody";
cout << word.at(3);
```
- a) m
  - b) e
  - c) r
  - d) d
9. What is the value of phrase after the following code executes?
- ```
string phrase = "A nice day", exes = "xxxx";
phrase.replace(2, 3, exes);
```
- a) "A xxxxce day"
  - b) "Axxxxice day"
  - c) "A xxxxe day"
  - d) "Axxxxce day"

## Chapter 4

### Short Answer:

1. Name the three control structures.
2. Write in C++ code:  
y is equal to -5 or 5
3. What happens if you omit the word **break** in a switch statement?
4. What data types can the selector expression in the switch statement evaluate to?
5. What is the value of x after the following code segment executes, if y is 20 and z is 2?

```
switch (y - z)
{
    case 20: x = y + z; break;
    case 21: x = y; break;
    case 22: x = z; break;
    default: x = y * 2;
}
```

### Multiple Choice:

6. Which of the following is **not** a relational operator:
  - a. <
  - b. >=
  - c. =
  - d. !=
7. Which of the following is equivalent to  $(p \geq q)$ 
  - a.  $p < q$
  - b.  $!(p < q)$
  - c.  $p > q$
  - d.  $!p < q$
8. What is the output of the following code:

```
int r = 3, s = 2, t = 4;
if ((r == 4) || !(s < t))
    r = r - 1;
else
    r = r * 2;
r = r + t;
cout << r;
```

- a) 6
- b) 10
- c) 5
- d) 4

9. What is the output of the following code:

```
char ch = 'c';
if (ch > 'g')
    cout << "high";
else if (ch < 'm')
    cout << "low";
else
    cout << "middle";
```

- a) high
- b) low
- c) middle
- d) c

## Chapter 5

### Short Answer:

1. What is the part of the loop that contains the statements to be repeated called?
2. What are the three steps that must be done using the loop control variable?
3. What kind of loop would you have if the loop body is entered but the loop control variable is not updated?
4. What is the error in the following code if its purpose is to add five numbers entered by the user?  

```
int x, sum;  
for ( int c = 0; c < 5; c++)  
{  
    cout << "Next number\n";  
    cin >> x;  
    sum = sum + x;  
}
```
5. What are the three loop structures in C++?

## Chapter 6

### Short Answer:

1. When a function has a reference parameter, what is passed to a function's data area when the function is called?
2. What is the advantage of using value parameters?
3. Given the function prototype, what is wrong with the following function call?

```
void test (int, int&); // function prototype  
  
test (a, &b); // function call
```

4. Given the function prototype, what is wrong with the following function call?  
**float** aFunction (**int**, **int&**, **float**);                    *// function prototype*
- float** y = aFunction (b, a + b, 3.7);                    *// function call*
5. If the call to the function arrange below puts the three integers a, b, and c in numerical order, write the function prototype for arrange.  
 arrange (a, b, c);                    *//function call*
6. What is the name for a function with a heading but minimal body, used for testing the flow of control?
7. What is the name for the testing of the flow of control between main and its subordinate functions?
8. What will happen if you forget to write the & for a reference parameter?

## Chapter 7

### **Short Answer:**

1. What are the four predefined data types of C++?
2. Write the compiler directive that is equivalent to the following line of code:  
**const** monthsInYear = 12;
3. What are the two parts of a floating point number's storage area called?
4. What are the three sizes of floating-point types in C++?
5. Write the code that would change a variable y of type int to a float.

### **Multiple Choice:**

1. Which of the following constant definitions is correct?
  - a) **const** float PRICE = 3,500;
  - b) **const** int LENGTH = 6.5;
  - c) **const** float COST = \$700.0;

d) `const int MY_HEIGHT = 60 / 12;`

2. Which of the following is **not** an integer type in C++?

- a) short int
- b) short
- b) extended int
- c) long int

3. The maximum value of an **int** data type in C++ is usually:about:

- a) 15,000
- b) 30,000
- c) 64,000
- d) There is no maximum value

4. Which of the following is cancellation error?

- a) When a number is too small and is represented by 0.
- b) When a number is too large and cannot be represented.
- c) When adding a very small number to a large number does not change the large number.
- d) When a decimal does not equal a fraction.

5. If x is type **int** and y is type **float** what promotion will occur in the following expression:

$$y = 5.0 + x$$

- a) **float to int**
- b) **int to float**
- c) **float to double**
- d) no promotion will occur

Chapter 8

**Short Answer:**

1. What is a stream?
2. What is the name of the standard output stream?

3. What is the symbol for the stream extraction operator?
4. What symbol do we use to represent a non-printable character?
5. What is '\n'?

## Chapter 9

### **Short Answer:**

1. What is a single item in an array called?
2. How do we refer to the third element in an array called `prices`?
3. Declare an array called `listOfNames` that contains 5 people's names.
4. If your code contains the following statement:  
`const int NUMBER_ITEMS = 10;`  
write a statement that creates an array, called `initials`, of 10 characters:
5. Write the code that will add ten to the fourth element of an array of integers called `ages`.
6. Write the code that defines an enumerated type `car` whose enumerators are `ford`, `toyota`, `honda` and an array `vehicle` whose ten elements are of data type `car`.
7. What is the length of the array `times` declared by:  
`string times[ ] = {"8:00", "9:15", "11:00", "12:30", "2:15"};`
8. What is the range of legal values for an array of size `n`?

## Chapter 10

**Short Answer:**

1. Name the two sections of a class:
2. An object is a(n) \_\_\_\_\_ of a class.
3. What C++ construct is used to define and implement an abstract data type?
4. What is the first line of the definition of a class called `car`?
5. What is the extension of the class header file?
6. Name the two kinds of items that are contained in a class:
7. Write the first two lines of a header file called `pencil.h` that prevent multiple definitions of the identifiers defined in the class:
8. What is the name of the file that contains the code for the class member functions?
9. A class called `employee` contains a member function called `getpay` that returns the pay of the employee. The pay is a data member of `employee`. Write the first line of the implementation of this function.
10. Name the function that automatically executes when an object of a class is declared.
11. A member function that changes the values of a data member is called a \_\_\_\_\_?
12. Write the compiler directive that would enable a program to use the user-defined class `date`.
13. Write the implementation of a member function called `clear_time` of an `employee` class that sets the value of a data member called `years_employed` to zero.

14. What is wrong with the following implementation of a member function that returns true if the age of an object of the `person` class is greater than 65?

```
bool isSenior () {  
    if (age > 65)  
        return true;  
    else  
        return false;  
}
```

15. What is the name of a program that uses a class?

16. When you have multiple functions with the same name this is called \_\_\_\_\_?

19. To return an object of a class, a function must call \_\_\_\_\_.

20. Given the following member function prototype and function call, why will the compiler return a message saying that `setAge` is not a member of `person`?

```
void setAge (int, int);    // function prototype
```

```
person me;  
me.setAge (50);           // function call
```