

CHAPTER 2 Written:

1. How many operands does each of the following types of operators require?

Unary: 1

Binary: 2

Ternary: 3

2. How may the double variables temp, weight, and age be defined in one statement?

double temp,weight,age;

3. How may the int variables months, days, and years be defined in one statement, with months initialized to 2 and years initialized to 3?

Int months =2, days, years=3;

4. Write assignment statements that perform the following operations with the variables a, b, and c:

A) $b = a + 2$;

B) $a = b * 4$;

C) $b = a / 3.14$;

D) $a = b - 8$;

E) $a = 27$;

F) $c = 'K'$;

G) $c = 'B'$

5. Is the following comment written using single-line or multi-line comment symbols?

`/* This program was written by M. A. Codewriter*/`

Multi Line

6. Is the following comment written using single-line or multi-line comment symbols?

`// This program was written by M. A. Codewriter`

Single line

7. Modify the following program so it prints two blank lines between each line of text.

`Cout << "\n\n";`

1. How many operands does each of the following types of operators require?

_____ Unary

_____ Binary

_____ Ternary

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2

3

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double temp, weight, age

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int months = 2, days, years = 3;

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6. Is the following comment written using single-line or multi-line comment symbols?

`/* This program was written by M. A. Codewriter*/`

Multi-line comment

`// This program was written by M. A. Codewriter`

Single_line;

7. Modify the following program so it prints two blank lines between each line of text.

```
#include <iostream>
```

```
int main()
```

```
{
```

```
    cout << "Two mandolins like creatures in the\n\n\n";
```

```
    cout << "dark\n\n\n";
```

```
    cout << "Creating the agony of ecstasy.\n\n\n";
```

```
    cout << " - George Barker\n\n\n";
```

```
    return 0;
```

```
};
```

8. What will the following programs print on the screen?

A) 0, 100

B) 8, 2

C) :I am the incredible computing machine and I will amaze you.

D):Be careful This might/n be a trick question

E) 23, 1;

9. Every complete statement ends with a

C: semicolon

10. Which of the following statements is correct?

C: #include <iostream>

11. Every C++ program must have a

B function main

12. Preprocessor directives begin with a

A#

13. The following data, 72, 'A', "Hello World", 2.8712 , are all examples of

B: Literals or constants

14. A group of statements, such as the contents of a function, is enclosed in

A: Braces {}

20. A(n) _____ is like a variable, but its value is read-only and cannot be changed during the program's execution.

C: Named Constant

CHAPTER 3 Written:

1. Assume that the following variables are defined:

int age;

double pay;

char section;

Write a single cin statement that will read input into each of these variables.

cin >> age >> pay >> section;

5. Write C++ expressions for the following algebraic expressions:

$A = 12x$

$z = 5x + 14y + 6k$

$y = x^4$

$g = h + 12 / 4k$

$c = a^3 / b^2k^4$

12. Write a cout statement so the variable divSales is displayed in a field of 8 spaces, in fixed point notation, with a precision of 2 decimal places. The decimal point should always be displayed.

cout << fixed << showpoint << setprecision(2);

cout << setw(8) << divSales;

18. The _____ library function returns the exponential function of a number.

exp

y = exp(x)

21. The _____ library function returns the base-10 logarithm of a number.

~ log10

log10

y = log10(x)

27. Write a pseudocode algorithm for a program that asks the user to enter a golfer's score for three games of gold, and then display the average of the three scores. After convert it to a complete C++ program:

Main.cpp

```
#include <iostream>
```

```
#include "gold.h"
```

```
Int main()
```

```
{
```

```
    Golf g;
```

```
    g.getScores();
```

```
    Cout << "Average is: " << g.getAverage() << endl;
```

```
}
```

Golf.cpp

```
#include <iostream>
```

```
#include "golf.h"
```

```
Using namespace std;
```

```
Void Golf::getScores();
```

```
{
```

```
    Cout << "Enter Score 1: "
```

```
    Cin >> score1;
```

```
    while(score1 < 0)
```

```
    {
```

```
        cin.clear();
```

```
        cin.ignore();
```

```
        Cout << "Please enter a valid score: ";
```

```
        Cin >> score1;
```

```
    }
```

```
    Cout << endl;
```

```
    Cout << "Enter Score 2: "
```

```
    Cin >> score2;
```

```
    while(score2 < 0)
```

```

{
    cin.clear();
    cin.ignore();
    Cout << "Please enter a valid score: ";
    Cin >> score2;
}
Cout << endl;
Cout << "Enter Score 3: "
Cin >> score3;
while(score3 < 0)
{
    cin.clear();
    cin.ignore();
    Cout << "Please enter a valid score: ";
    Cin >> score3;
}
}

```

```

Int Golf::getAverage();
{
    Int total = score1 + score2 + score3;
    Return total/3;
}

```

Golf.h

Class Golf

```

{
    Private:
    Int score1, score2, score3;
    Public:
    Void getScores();
    Int getAverage();
}

```

CHAPTER 4 Written:

1.Describe the difference between an if/else if and a series of if statements?

The difference between an if/else if statement and a series of if statements is a series of if statements will always run every if statement. Within an if/else if statement, only the if statement that is true will run.

3.What is a flag and how does it work?

We use a flag variable as a variable that can be changed to show the outcome of an operation. An example would be setting a flag variable to false, doing some logic, then if that logic returns true, we change our flag variable to true.

5. Briefly describe how the && operator works.

The && operator must have true statements on either side of the operator for it to enter the next operation; if, while, etc. Example if(x>1 && x<3). x MUST be greater than 1 and less than 3.

7. Why are the relational operators called relational?

Relational operators are called relational because they require at least 2 operands to compare. There must be a relation between the 2 variables.

9. An expression using the greater than, less than, etc operators are called?

These expressions are called relational expressions.

11. The value of a relational expression is 0 if the expression is __ or 1 if the expression is __.

False, True

13. The if statement regards a nonzero value as a __

True

15. In an if else statement, the if executes its statement or block if the expression is __, and the else executes its statement or block if the expression is __.

True, False

17. The if/else if statement is actually a form of the _____ if statement.

Nested

19. If the sub-expression on the left of the _____ logical operator is true, the right sub-expression is not checked.

The || logical operator

21. The logical operators have _____ associativity.

Left-to-right

23. The _____ logical operator works best when testing a number to determine if it is outside a range.

The || logical operator

CHAPTER 5 Written:

1. Why should you indent the statements in the body of a loop?

By indenting the statements, you make them stand out from the surrounding code. This helps you to identify the statements that are conditionally executed by a loop

3. Why are the statements in the body of a loop called conditionally executed statements?

Because they are only executed when a condition is true

5. Which loop should you use in situations where you wish the loop to repeat until the test expression is false, and the loop should not execute if the test expression is false to begin with?

The while loop

7. Which loop should you use when you know the number of required iterations?

The for loop

9. Why is it critical that accumulator variables be properly initialized?

Accumulator is used to keep a running total of numbers. In a loop, a value is usually added to the current value of the accumulator. If it is not properly initialized, it will not contain the correct total.

11. What header file do you need to include in a program that performs file operations?

<fstream>

13. What data type do you use when you want to create a file stream object that can write data to a file?

ofstream

15. What is a file's read position? Where is the read position when a file is first opened for reading?

When a file has been opened for input, the file stream object internally maintains a value known as a read position. A file's read position marks the location of the next byte that will be read from the file. When an input file is opened, its read position is initially set to the first byte in the file. So, the first read operation extracts data starting at the first byte. As data is read from the file, the read position moves forward, toward the end of the file.

17. When the increment or decrement operator is placed before the operand (or to the operand's left), the operator is being used in _____ mode.

prefix

19. The statement or block that is repeated is known as the _____ of the loop.

body

21. A loop that evaluates its test expression before each repetition is a(n) _____ loop.
pretest

23. A loop that does not have a way of stopping is a(n) _____. loop.
Infinite

25. A(n) _____ is a sum of numbers that accumulates with each iteration of a loop.
accumulator

39. Write a nested loop that displays 10 rows of #'s and 15 #'s in each row.

```
for(int i=0; i<10; i++)  
{  
    for(int x=0; x<15; x++)  
    {  
        Cout << "#";  
    }  
    Cout << endl;  
}
```

CHAPTER 7 Written:

1. What is the difference between a size declarator and a subscript?

The size declarator is used in a definition of an array to indicate the number of elements the array will have. A subscript is used to access a specific element in an array.

3. Why should a function that accepts an array as an argument, and processes that array, also accept an argument specifying the array's size?

Because, with the array alone the function has no way of determining the number of elements it has.

5. How do you define an array without providing a size declarator?

By providing an initialization list. The array is sized to hold the number of values in the list.

7. Assuming that array1 and array2 are both arrays, why is it not possible to assign the contents of array2 to array1 with the following statement?

array1 = array2;

Because an array name without brackets and a subscript represents the array's beginning memory address. The statement shown attempts to assign the address of array2 to array1, which is not permitted.

9. Is an array passed to a function by value or by reference?

Reference

11. How do you establish a parallel relationship between two or more arrays?

By using the same subscript value for each array.

13. When writing a function that accepts two-dimensional arrays as an argument, which size declarator must you provide in the parameter for the array?

The second size declarator, which is for the number of columns.

15. The _____ indicates the number of elements, or values an array can hold.
size declarator

17. Each element of an array is accessed and indexed by a number known as a _____.
Subscript

19. The number inside the brackets of an array definition is the _____, but the number inside an array's bracket is an assignment statement, or any other statement that works with the contents of the array, is the _____.
size declarator, subscript

21. Starting values for an array may be specified with an _____ list.
initialization

23. If the size declaratory of an array definition is omitted, C++ counts the number of items in the _____ to determine how large the array should be.
initialization list

25. You cannot use the _____ operator to copy data from one array to another in a single statement.
assignment (i.e. =)

27. To pass an array to a function, pass the _____ of the array.
name

29. It's best to think of a two-dimensional array as having _____ and _____.
rows, columns

32. When a two-dimensional array is passed to a function the ____ size must be specified.
column

37. To store a value in a vector that does not have a starting size, or that is already full, use the _____ member function.
Push_back

39. Use the _____ member function to remove the last element from a vector .
Pop_back