

## Chapter 2: Basic Elements of C++

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### TRUE/FALSE

- In C++, reserved words are the same as predefined identifiers.  
ANS: F            PTS: 1            REF: 36
- The maximum number of significant digits in values of the `double` type is 15.  
ANS: T            PTS: 1            REF: 42
- The maximum number of significant digits in `float` values is up to 6 or 7.  
ANS: T            PTS: 1            REF: 42
- An operator that has only one operand is called a unique operator.  
ANS: F            PTS: 1            REF: 45
- If a C++ arithmetic expression has no parentheses, operators are evaluated from left to right.  
ANS: T            PTS: 1            REF: 46
- A mixed arithmetic expression contains all operands of the same type.  
ANS: F            PTS: 1            REF: 49
- Suppose `a = 5`. After the execution of the statement `++a`; the value of `a` is 6.  
ANS: T            PTS: 1            REF: 70
- The escape sequence `\r` moves the insertion point to the beginning of the next line.  
ANS: F            PTS: 1            REF: 78
- A comma is also called a statement terminator.  
ANS: F            PTS: 1            REF: 90
- Suppose that `sum` is an `int` variable. The statement `sum += 7;` is equivalent to the statement `sum = sum + 7;`  
ANS: T            PTS: 1            REF: 95

### MULTIPLE CHOICE

- The \_\_\_\_ rules of a programming language tell you which statements are legal, or accepted by the programming language.
  - semantic
  - logical
  - syntax
  - grammatical

ANS: C                    PTS: 1                    REF: 34

2. Which of the following is a reserved word in C++?
- a. char
  - b. Char
  - c. CHAR
  - d. character

ANS: A                    PTS: 1                    REF: 36

3. Which of the following is a legal identifier?
- a. program!
  - b. program\_1
  - c. 1program
  - d. program 1

ANS: B                    PTS: 1                    REF: 36

4. \_\_\_\_ is a valid int value.
- a. 46,259
  - b. 46259
  - c. 462.59
  - d. -32.00

ANS: B                    PTS: 1                    REF: 39-40

5. \_\_\_\_ is a valid char value.
- a. -129
  - b. 'A'
  - c. 128
  - d. 129

ANS: B                    PTS: 1                    REF: 40

6. An example of a floating point data type is \_\_\_\_.
- a. int
  - b. char
  - c. double
  - d. short

ANS: C                    PTS: 1                    REF: 41

7. The memory allocated for a float value is \_\_\_\_ bytes.
- a. two
  - b. four
  - c. eight
  - d. sixteen

ANS: B                    PTS: 1                    REF: 42

8. The value of the expression  $33/10$ , assuming both values are integral data types, is \_\_\_\_.
- a. 0.3
  - b. 3
  - c. 3.0
  - d. 3.3

ANS: B                    PTS: 1                    REF: 43-44

9. The value of the expression  $17 \% 7$  is \_\_\_\_.
- a. 1
  - b. 2
  - c. 3
  - d. 4

ANS: C                    PTS: 1                    REF: 43-44

10. The expression `static_cast<int>(9.9)` evaluates to \_\_\_\_.
- a. 9
  - b. 10
  - c. 9.9
  - d. 9.0

ANS: A                    PTS: 1                    REF: 51

11. The expression `static_cast<int>(6.9) + static_cast<int>(7.9)` evaluates to \_\_\_\_.
- a. 13
  - b. 14
  - c. 14.8
  - d. 15

ANS: A                    PTS: 1                    REF: 51

12. The length of the string "computer science" is \_\_\_\_.
- a. 14
  - b. 15
  - c. 16
  - d. 18

ANS: C                    PTS: 1                    REF: 54

13. In a C++ program, one and two are double variables and input values are 10.5 and 30.6. After the statement `cin >> one >> two;` executes, \_\_\_\_.
- a. one = 10.5, two = 10.5
  - b. one = 10.5, two = 30.6
  - c. one = 30.6, two = 30.6
  - d. one = 11, two = 31

ANS: B                    PTS: 1                    REF: 64

14. Suppose that count is an int variable and `count = 1`. After the statement `count++;` executes, the value of count is \_\_\_\_.
- a. 1
  - b. 2
  - c. 3
  - d. 4

ANS: B                    PTS: 1                    REF: 70

15. Suppose that alpha and beta are int variables. The statement `alpha = --beta;` is equivalent to the statement(s) \_\_\_\_.
- a. `alpha = 1 - beta;`
  - b. `alpha = beta - 1;`
  - c. `beta = beta - 1;`  
`alpha = beta;`
  - d. `alpha = beta;`  
`beta = beta - 1;`

ANS: C                    PTS: 1                    REF: 70-71

16. Suppose that alpha and beta are int variables. The statement `alpha = beta--;` is equivalent to the statement(s) \_\_\_\_.
- a. `alpha = 1 - beta;`
  - b. `alpha = beta - 1;`
  - c. `beta = beta - 1;`  
`alpha = beta;`
  - d. `alpha = beta;`  
`beta = beta - 1;`

ANS: D                    PTS: 1                    REF: 70-71

17. Suppose that alpha and beta are int variables. The statement `alpha = beta++;` is equivalent to the statement(s) \_\_\_\_.
- a. `alpha = 1 + beta;`
  - b. `alpha = alpha + beta;`
  - c. `alpha = beta;`  
`beta = beta + 1;`
  - d. `beta = beta + 1;`

```
alpha = beta;
```

ANS: C                   PTS: 1                   REF: 70-71

18. Suppose that alpha and beta are int variables. The statement `alpha = ++beta;` is equivalent to the statement(s) \_\_\_\_.
- a. `beta = beta + 1;`  
`alpha = beta;`
  - b. `alpha = beta;`  
`beta = beta + 1;`
  - c. `alpha = alpha + beta;`
  - d. `alpha = beta + 1;`

ANS: A                   PTS: 1                   REF: 70-71

19. Choose the output of the following C++ statement:  
`cout << "Sunny " << '\n' << "Day " << endl;`
- a. Sunny \nDay
  - b. Sunny \nDay endl
  - c. Sunny  
Day
  - d. Sunny \n  
Day

ANS: C                   PTS: 1                   REF: 73

20. Which of the following is the newline character?
- a. `\r`
  - b. `\n`
  - c. `\l`
  - d. `\b`

ANS: B                   PTS: 1                   REF: 73

21. Consider the following code.

```
// Insertion Point 1

using namespace std;
const float PI = 3.14;

int main()
{
    //Insertion Point 2

    float r = 2.0;
    float area;
    area = PI * r * r;

    cout << "Area = " << area <<endl;
    return 0;
}
// Insertion Point 3
```

In this code, where does the include statement belong?

- a. Insertion Point 1
- b. Insertion Point 2
- c. Insertion Point 3
- d. Anywhere in the program

ANS: A                    PTS: 1                    REF: 80

22. \_\_\_\_ are executable statements that inform the user what to do.
- a. Variables
  - b. Prompt lines
  - c. Named constants
  - d. Expressions

ANS: B                    PTS: 1                    REF: 91

23. The declaration `int a, b, c;` is equivalent to which of the following?
- a. `inta , b, c;`
  - b. `int a,b,c;`
  - c. `int abc;`
  - d. `int a b c;`

ANS: B                    PTS: 1                    REF: 92

24. Suppose that `alpha` and `beta` are `int` variables and `alpha = 5` and `beta = 10`. After the statement `alpha *= beta;` executes, \_\_\_\_.
- a. `alpha = 5`
  - b. `alpha = 10`
  - c. `alpha = 50`
  - d. `alpha = 50.0`

ANS: C                    PTS: 1                    REF: 94

25. Suppose that `sum` and `num` are `int` variables and `sum = 5` and `num = 10`. After the statement `sum += num` executes, \_\_\_\_.
- a. `sum = 0`
  - b. `sum = 5`
  - c. `sum = 10`
  - d. `sum = 15`

ANS: D                    PTS: 1                    REF: 95

## COMPLETION

1. \_\_\_\_\_ is the process of planning and creating a program.

ANS:  
Programming  
programming

PTS: 1                    REF: 28

2. A(n) \_\_\_\_\_ is a memory location whose contents can be changed.

ANS: variable

PTS: 1                    REF: 33

3. A(n) \_\_\_\_\_ is a collection of statements, and when it is activated, or executed, it accomplishes something.

ANS:  
subprogram  
sub program  
sub-program  
function  
modlue

PTS: 1 REF: 34

4. \_\_\_\_\_ functions are those that have already been written and are provided as part of the system.

ANS:  
Predefined  
predefined  
Standard  
standard

PTS: 1 REF: 34

5. \_\_\_\_\_ rules determine the meaning of instructions.

ANS:  
Semantic  
semantic

PTS: 1 REF: 34

6. \_\_\_\_\_ can be used to identify the authors of the program, give the date when the program is written or modified, give a brief explanation of the program, and explain the meaning of key statements in a program.

ANS:  
Comments  
comments

PTS: 1 REF: 34

7. The smallest individual unit of a program written in any language is called a(n) \_\_\_\_\_.

ANS: token

PTS: 1 REF: 35

8. In a C++ program, \_\_\_\_\_ are used to separate special symbols, reserved words, and identifiers.

ANS:  
whitespaces  
whitespace  
white spaces  
white space

PTS: 1 REF: 37

9. The \_\_\_\_\_ type is C++'s method for allowing programmers to create their own simple data types.

ANS: enumeration

PTS: 1 REF: 38

10. The memory space for a(n) \_\_\_\_\_ data value is 64 bytes.

ANS: long long

PTS: 1 REF: 39

11. The maximum number of significant digits is called the \_\_\_\_\_.

ANS: precision

PTS: 1 REF: 42

12. When a value of one data type is automatically changed to another data type, a(n) \_\_\_\_\_ type coercion is said to have occurred.

ANS: implicit

PTS: 1 REF: 51

13. A(n) \_\_\_\_\_ is a sequence of zero or more characters.

ANS: string

PTS: 1 REF: 53

14. In C++, you can use a(n) \_\_\_\_\_ to instruct a program to mark those memory locations in which data is fixed throughout program execution.

ANS:  
named constant  
constant

PTS: 1 REF: 55

15. A data type is called \_\_\_\_\_ if the variable or named constant of that type can store only one value at a time.

ANS: simple

PTS: 1 REF: 57