

Starting Out with C++ from Control Structures to Objects, 9e (Gaddis)

Chapter 3 Expressions and Interactivity

TRUE/FALSE

1. When the **fixed** manipulator is used, the value specified by the **setprecision** manipulator will be the number of digits to appear after the decimal point.

ANS: T

2. The only difference between the **get** function and the **>>** operator is that **get** reads the first character typed, even if it is a space, tab, or the [Enter] key.

ANS: T

3. The **cin <<** statement will stop reading input when it encounters a newline character.

ANS: T

4. If you want to know the length of the string that is stored in a **string** object, you can call the object's **size** member function.

ANS: F

5. Arithmetic operators that share the same precedence have right to left associativity.

ANS: F

6. When C++ is working with an operator, it strives to convert the operands to the same type.

ANS: T

7. When a program uses the **setw** manipulator, the **iosetwidth** header file must be included in a preprocessor directive.

ANS: F

8. The following statement will output **\$5.00** to the screen:

```
cout << setprecision(5) << dollars << endl;
```

ANS: F

9. In C++, it is impossible to display the number 34.789 in a field of 9 spaces with 2 decimal places of precision.

ANS: F

10. The **fixed** manipulator causes a number to be displayed in scientific notation.

ANS: F

MULTIPLE CHOICE

1. The _____ causes a program to wait until information is typed at the keyboard and the [Enter] key is pressed.
- output stream
 - cin** object
 - cout** object
 - preprocessor
 - None of these

ANS: B

2. The _____ operator always follows the **cin** object, and the _____ operator follows the **cout** object.
- binary, unary
 - conditional, binary
 - >>, <<**
 - <<, >>**
 - None of these

ANS: C

3. Which of the following must be included in any program that uses the **cin** object?
- compiler
 - the header file **iostream**
 - linker
 - brackets
 - None of these

ANS: B

4. When a user types values at the keyboard, those values are first stored
- as ASCII characters
 - in the header file **iostream**
 - in the keyboard buffer
 - as integers
 - None of these

ANS: C

5. Which of the following will allow the user to input the values **15** and **20** and have them stored in variables named **base** and **height**, respectively?
- cin << base << height;**
 - cin base, height;**
 - cin >> base >> height;**
 - cin base >> cin height;**
 - None of these

ANS: C

6. What will be displayed after the following statements execute?

```
int num1 = 5;
int num2 = 3;
cout << "The result is " << (num1 * num2 + 10) << endl;
```

- a. The result is $5 * 3 + 10$
- b. The result is $(num1 * num2 + 10)$
- c. The result is 25
- d. The result is 65
- e. None of these

ANS: C

7. What is the value of **result** after the following statement executes?

```
result = (3 * 5) % 4 + 24 / (15 - (7 - 4));
```

- a. -6.4
- b. 5
- c. 1.6
- d. 2.25
- e. None of these

ANS: B

8. In the following statement, what will be executed first according to the order of precedence?

```
result = 6 - 3 * 2 + 7 - 10 / 2;
```

- a. $6 - 3$
- b. $3 * 2$
- c. $2 + 7$
- d. $10 / 2$
- e. $7 - 10$

ANS: B

9. Associativity is either right to left or

- a. top to bottom
- b. front to back
- c. left to right
- d. undeterminable
- e. None of these

ANS: C

10. What is the value of **x** after the following code executes?

```
int x = 0;
int y = 5;
int z = 4;
x = x + y + z * 2;
```

- a. 18
- b. 0

- c. 13
- d. 26
- e. unknown

ANS: C

11. What is the value of **average** after the following code executes?

```
double average;  
average = 1.0 + 2.0 + 3.0 / 3.0;
```

- a. 2.0
- b. 3.0
- c. 4.0
- d. 2
- e. unknown

ANS: C

12. What is the value of **cube** after the following code executes?

```
double cube, side;  
side = 5.0;  
cube = pow(side, 3.0);
```

- a. 25.0
- b. 15.0
- c. 125.0
- d. 8.0
- e. unknown

ANS: C

13. When the final value of an expression is assigned to a variable, it will be converted to

- a. the smallest C++ data type
- b. the largest C++ data type
- c. the data type of the variable
- d. the data type of the expression
- e. None of these

ANS: C

14. When C++ is working with an operator, it strives to convert operands to the same type. This is known as

- a. type correction
- b. type conversion
- c. promotion
- d. demotion
- e. None of these

ANS: B

15. When a variable is assigned a number that is too large for its data type, it

- a. underflows
- b. overflows
- c. reverses

- d. converts
- e. None of these

ANS: B

16. What is the value of **x** after the following code executes?

```
int x;  
x = 3 / static_cast<int>(4.5 + 6.4);
```

- a. 0.3
- b. 0
- c. 0.275229
- d. 3.3
- e. None of these

ANS: B

17. Which statement is equivalent to the following?

```
number += 1;
```

- a. `number = number + 1;`
- b. `number = 1;`
- c. `number + 1;`
- d. `number =+ 1;`
- e. None of these

ANS: A

18. Which statement is equivalent to the following?

```
number = number * 2;
```

- a. `number = pow(number, 2);`
- b. `number *= 2;`
- c. `number = number * number;`
- d. `number * 2 = number;`
- e. None of these

ANS: B

19. What is the value of **number** after the following statements execute?

```
int number = 10;  
number += 5;  
number -= 2;  
number *= 3;
```

- a. 3
- b. 30
- c. 39
- d. 2
- e. None of these

ANS: C

20. This manipulator is used to establish a field width for the value that follows it:

- a. `field_width`

- b. `set_field`
- c. `setw`
- d. `iomanip`
- e. None of these

ANS: C

21. This manipulator causes the field to be left justified with padding spaces printed to the right:
- a. `left_justify`
 - b. `right`
 - c. `left`
 - d. `left_pad`
 - e. None of these

ANS: C

22. You can control the number of significant digits in your output with the _____ manipulator.
- a. `setprecision`
 - b. `set_precision`
 - c. `to_fixed`
 - d. `setfixed()`
 - e. None of these

ANS: A

23. This manipulator forces `cout` to print digits in fixed-point notation:
- a. `setprecision(2)`
 - b. `setw(2)`
 - c. `fixed`
 - d. `setfixed(2)`
 - e. None of these

ANS: C

24. What is true about the following statement?

```
cout << setw(4) << num4 << "  " ;
```

- a. It allows four spaces for the value in `num4`.
- b. It outputs "`setw(4)`" before the value in `num4`.
- c. It is incorrect because it should use `setw(10)`.
- d. It is incorrect because it should use `setw(num4)`.

ANS: A

25. Which of the following statements will pause the screen until the [Enter] key is pressed?

- a. `cin;`
- b. `cin.getline();`
- c. `cin.get();`
- d. `cin.ignore();`
- e. `cin.input();`

ANS: C

26. Which of the following statements will allow the user to enter three values to be stored in variables **length**, **width**, and **height**, in that order?
- `cin << length, width, height;`
 - `cin.get(height, width, length);`
 - `cin.get(length, width, height);`
 - `cin >> length; width; height;`
 - `cin.get(length >> width >> height);`

ANS: C

27. Which of the following functions tells the **cin** object to skip one or more characters in the keyboard buffer?
- `cin.ignore`
 - `cin.jump`
 - `cin.hop`
 - `cin.skip`
 - None of these

ANS: A

28. _____ reads a line of input, including leading and embedded spaces, and stores it in a **string** object.
- `cin.get`
 - `getline`
 - `cin.getline`
 - `get`
 - None of these

ANS: B

29. Which of the following statements will read an entire line of input into the **string** object, **address**?
- `cin << address;`
 - `cin address;`
 - `cin.get(address);`
 - `getline(cin, address);`
 - `cin.get(length >> width >> height);`

ANS: D

30. How many characters will the following statement read into the variable **myString**?

```
cin >> setw(10) >> myString;
```

- 9
- 10
- 11
- however many characters are in **myString**
- None of these

ANS: A

31. The function **pow(x, y)**, requires which header file?

- a. `cstdlib`
- b. `cstring`
- c. `iostream`
- d. `cmath`
- e. `ioomanip`

ANS: D

32. To use the `rand()` function, you must include the _____ header file?

- a. `cstdlib`
- b. `cstring`
- c. `iostream`
- d. `cmath`
- e. `ioomanip`

ANS: A

33. Which of the following functions will return the value of `x`, rounded to the nearest whole number?

- a. `abs(x)`
- b. `fmod(x)`
- c. `sqrt(x)`
- d. `round(x)`
- e. `whole(x)`

ANS: D

34. Which line in the following program will cause a compiler error?

```
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     const int MY_VAL = 77;
7     MY_VAL = 99;
8     cout << MY_VAL << endl;
9     return 0;
10 }
```

- a. line 6
- b. line 7
- c. line 8
- d. line 9
- e. there will be no compiler error

ANS: B

35. A debugging process where you, the programmer, pretend you are a computer and step through each statement while recording the value of each variable at each step is known as

- a. error checking
- b. hand writing
- c. hand tracing
- d. error handling
- e. None of these

ANS: C