

Engineering Problem Solving with C++, 3e Chapter 2 Test Bank

1. Match each of the following data types with literal constants of that data type. A data type can be used more than once.

- | | | |
|-----------------------|-------|----------|
| A. integer | _____ | 1.427E3 |
| B. double | _____ | "Oct" |
| C. character | _____ | -63.29 |
| D. string | _____ | #Hashtag |
| E. boolean | _____ | '+' |
| F. none of the above. | _____ | -85 |
| | _____ | true |
| | _____ | "\" |

2. For each of the following determine if it is a valid identifier, and if it is not state why.

- A. House#
- B. 2nd
- C. WHILE
- D. num4
- E. double
- F. last_name

3. Evaluate the following functions

- A. $(4 - 7) * 3$
- B. $14 \% 4$
- C. $24 / 9$
- D. $6.72 / 4.2$
- E. $2 + 8 * 3 + 7$

4. What is the output of the following program.

```
#include <iostream>
#include <iomanip>
using namespace std;
int main ()
{ int hr, min;
  hr = 1;
  min = 50;
  cout << "The exam is over at " << hr << ":" << min << endl;
  cout << "One down\n " << "two to go!";
  return 0;
}
```

5. What is the output of the following program

```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{ int WholeNumber;
  double Real1, Real2;
  WholeNumber = 76;
  Real1 = 3.167;
  Real2 = -24.103;
  cout << setw(6) << WholeNumber << endl;
  cout << setiosflags(ios::fixed);
  cout << setprecision(2) << Real1 << ", " << Real2 << endl;
  cout << setiosflags(ios::showpoint) << Real2 << 8.376 << endl;
  return 0;
}
```

6. Which of the following are valid on the left side of an assignment operator?
- A. A numeric constant
 - B. An expression such as $8*6$
 - C. A declared constant
 - D. A variable
 - E. All of the above are valid on the left side of an assignment operator.
7. Which of the following is valid on the right side of an assignment operator?
- A. A numeric constant
 - B. An expression such as $8*6$
 - C. A declared constant
 - D. A variable
 - E. All of the above are valid on the right side of an assignment operator.
8. The operator `>>` is used to
- A. Take a value from the input stream and store it into a variable
 - B. Take a value from a variable and place it into the output stream
 - C. Perform integer division and produce the remainder of the division
 - D. Specify that the left hand operand is much larger than the right hand operand.
9. The file which must appear in a `#include` preprocessor statement if you are using the `fabs` function is ...
- A. `iostream`
 - B. `iomanip`
 - C. `cmath`
 - D. `string`

10. Which of the following is not a data type used to represent a floating point value
 - A. float
 - B. double
 - C. long double
 - D. short

11. Which of the following is not a syntactically correct declaration?
 - A. `int number(12);`
 - B. `double value1(4.5); value2(3.7);`
 - C. `double tax_percent =0.06;`
 - D. `double x{0.0};`
 - E. `int x,y,z;`

12. Which of the following operators is the increment operator
 - A. `+=`
 - B. `+`
 - C. `%`
 - D. `++`

13. Which output flag is set to guarantee that a decimal point will be printed when printing a floating point value?
 - A. fixed
 - B. showpoint
 - C. precision
 - D. setw

14. Function arguments are ...
 - A. the term used for the name of the function
 - B. the term that refers to the value returned by a function
 - C. the term that refers to the values passed to the function when the function is invoked.
 - D. the term that refers to a function invocation.

15. Which of the following function invocations is an approximation of PI
 - A. `atan(-1);`
 - B. `acos(-1);`
 - C. `sin(-1);`
 - D. `cos(-1);`

16. Line comments begin with `//` and run for the rest of the line
 - A. true
 - B. false

17. The purpose of a comment is to help the compiler understand your program and create efficient object code.
 - A. true
 - B. false

18. The math function `sin` will compute sine when given the angle in degrees
 - A. true
 - B. false

19. The `setw` manipulator is used to set the field width for all values that are printed until another `setw` manipulator is encountered.
 - A. true
 - B. false

20. The preprocessor directive `#include <iostream>` copies the file `iostream` into the program before compilation, so that the program can use input and output objects and operators.
 - A. true
 - B. false

21. The operand of the increment operator may be either a declared constant or a variable.
 - A. true
 - B. false

22. The math function `tan` will compute tangent when the angle is given in radians.
 - A. true
 - B. false

23. In a case sensitive language, such as C++, the variables **apples** and **APPLES** refer to different storage locations.
 - A. true
 - B. false

24. An expression involving operators can appear after the output operator `<<` in a `cout` statement.
 - A. true
 - B. false

25. The precision of a floating point number is determined by the number of bits used to represent the exponent.
 - A. true
 - B. false

26. Given the declaration `auto i = 0;` `i` is declared as an `int`.
 - A. True
 - B. False

27. Given the declaration `auto i = 1.0;` `i` is declared as a `double`
 - A. True
 - B. False

28. C++ is a strongly typed programming language.
- A. True
 - B. False

29. Symbolic constants in C++ are declared with the modifier `const`; attempting to change the value of a symbolic constant will be flagged as a syntax error by the compiler.
- A. True
 - B. False
30. Class declarations specify a programmer-defined type/object.
- A. True
 - B. False
31. Class members may include data (attributes) and methods (functions).
- A. True
 - B. False
32. Which of the following visibilities may be used to control access to class members:
- A. `public`
 - B. `protected`
 - C. `private`
 - D. All of these are visibilities used to control access to class members.
33. Class attributes define the operations that may be performed on class objects.
- A. True
 - B. False
34. Constructors are special methods of a class that are executed when objects of the class type are created.
- A. True
 - B. False
35. There may be exactly one constructor defined in any class.
- A. True
 - B. False
36. Constructors must have the same name as the class.
- A. True
 - B. False
37. Once a class is defined, you may use the class as a type specifier.
- A. True
 - B. False