

# Test Bank for Engineering Problem Solving With C++ 4th Edition by Etter Ingber ISBN 0134444299 9780134444291

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Solution Manual:

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- 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	<u>    </u> B	1.427E3
B. double	<u>    </u> D	"Oct"
C. character	<u>    </u> B	-63.29
D. string	<u>    </u> F	#Hashtag
E. boolean	<u>    </u> C	'+'
F. none of the above.	<u>    </u> A	-85
	<u>    </u> E	true
	<u>    </u> C	'\"'
- For each of the following determine if it is a valid identifier, and if it is not state why.

A. House#	not valid, # is not allowed in identifier
B. 2nd	not valid, identifiers must start with letter or underscore not a number
C. WHILE	valid
D. num4	valid
E. double	not valid, double is a keyword
F. last_name	valid
- Evaluate the following expressions

A. (4-7)*3	-9
B. 14%4	2
C. 24/9	2
D. 6.72 / 4.2	1.6
E. 2+8*3+7	33
- 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;  
}
```

The exam is over at 1:50

One down

two to go!

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;
}
```

76

3.17, -24.10  
-24.108.38

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 are 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  $\gg$  is used to
- A. Extract a value from the input stream and assign it to 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 type `double`.
- A. True
  - B. False

28. C++ is a strongly typed programming language.
- A. True
  - B. False
  - C.
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 by 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. Constructors must have the same name as the class
- A. True
  - B. False
36. There must be exactly one constructor defined in every class.
- A. True
  - B. False
37. Once a class is defined, you may use the class as a type specifier.
- A. True
  - B. False

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;
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