#A. Checklist for C++ Beginners











NOTE:

该比赛已结束, 您无法在比赛模式下递交该题目。您可以点击"在题库中打开"以普通模式查看和递交本题。

Checklist for C++ Beginners

Answer the following questions according to the C++17 standard.

You may find the answers to these questions in any way, e.g. from the slides, from the Internet, from textbooks, from ChatGPT, or talk with your friends. Some of you may even enumerate all possible answers and try them on OJ to find out the answers, which we highly advise against but cannot prevent. But make sure you really have understood them. Similar questions may appear in exams, in code you write and in other materials you read. These are very basic things about C++, which average students should understand.

The OJ may not save your answers. Make sure you have saved them elsewhere, or you may have to re-answer all the questions for every submission.

1. (5 points) What is the type of the string literal "this"?

Hint: Type it in your code editor and put your mouse on it. Any modern code editor will tell you its type.

2. (5 points) Which standard library file is std::cin defined in?
<pre>O A. std::iostream O B. iostream O C. iostream.h O D. std.iostream</pre>
<pre>3. (5 points) Which standard library file is std::string defined in? O A. string.h O B. cstring O C. string O D. std::string</pre>
4. (5 points) Let p be a pointer and a be of type int [5]. Which of the following expressions yield(s) an Ivalue?
 □ A. *p □ B. &a □ C. a[3] □ D. *&a □ E. ++p
5. (5 points) Which of the following statements regarding C++ IOStream is/are true?
 □ A. std::cin is a function used for reading things from input. □ B. When we use std::cin to read things, we need to pass the address of the variable. □ C. Unlike printf, std::cout is able to detect the type of the variable automatically and to choose the correct way to print its value. □ D. When using std::cin to read an integer variable, we need to make sure there are no leading whitespaces.
6. (5 points) Let s be an object of type std::string. What is the length of it?

```
\Box C. sizeof(s)
  ☐ D. sizeof(s) / sizeof(char)
 7. (5 points) Read the following code.
  #include <string>
  int main() {
    std::string s1;
    std::string s2("Hello");
    std::string s3();
    std::string s4(48, 49);
    // ...
Which of the following statements is/are true?
  ☐ A. s1 is uninitialized and has indeterminate value.
  ☐ B. s1 represents the empty string "".
  \Box C. The last character in s2 is '\0'.
  ☐ D. s3 is an empty string.
  ☐ E. The content of s4 is "01".
 8. (5 points) Which of the following expressions will print Hello world?
  ☐ A. std::cout << "Hello " + "world"
  ☐ B. std::cout << std::string("Hello") + " world"
  C.std::cout << std::string("Hello") + ' ' + "world"</pre>
```

9. (5 points) Read the following code.

D. std::cout << "Hello" + ' ' + std::string("world")</pre>

```
int main() {
    int n;
    std::cin >> n;
    std::vector v;
    for (int i = 0; i != n; ++i) {
        int value; std::cin >> value;
        v[i] = value;
    }
    std::cout << v << std::endl;
    return 0;
}</pre>
```

Which of the following statements is/are false?

```
\Box A. The type of v is std::vector.
```

- ☐ B. The type of v is deduced to be std::vector<int>.
- \Box C. v[i] = value; will add an element of value value to the end of v.
- □ D. If the input is 3 10 20 30, the output will be [10, 20, 30].

10. (5 points) Read the following code.

```
std::string &fun(std::string &str) {
  const std::string &s1 = str;
  return str;
  return s1;
}
```

Which of the following statements is/are true?

- ☐ A. In the parameter declaration std::string &str, & is the address-of operator that takes the address of str.
- ☐ B. const std::string &s1 = str; makes s1 a copy of the string that str refers to.



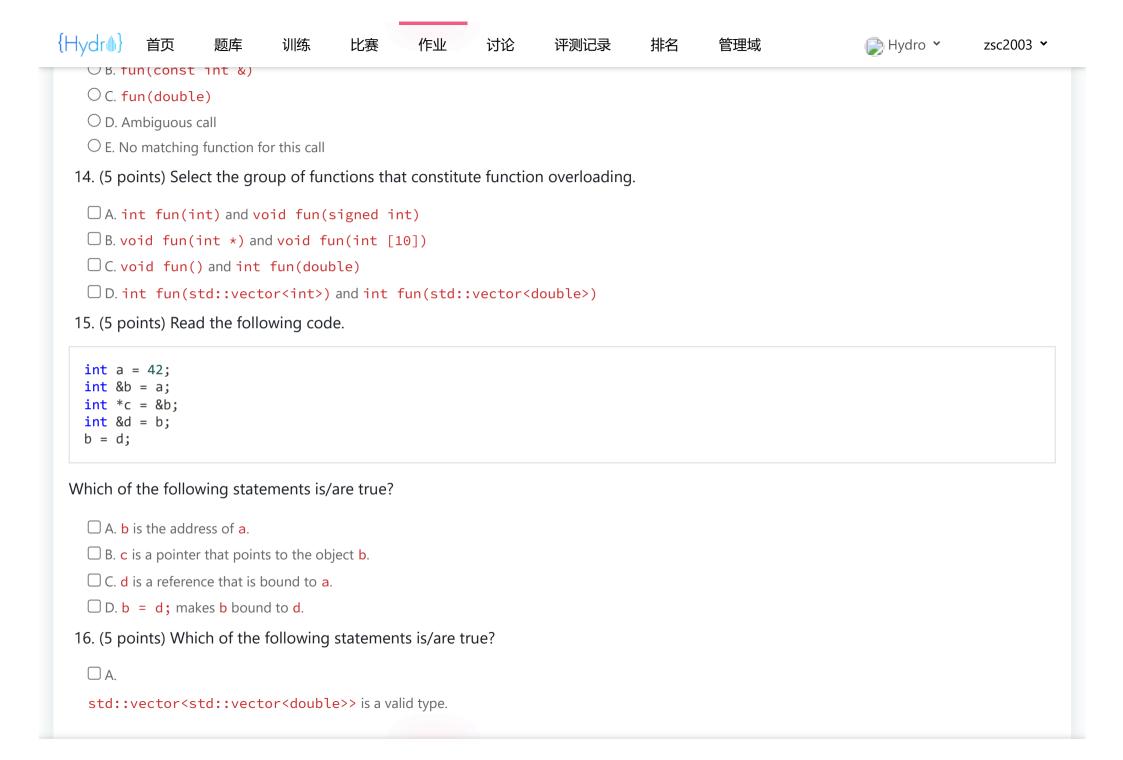
```
D. return s1; has the same effect as return str;
 ☐ E. return s1; causes compile-error.
 ☐ F. fun("Hello") causes compile-error.
11. (5 points) Which of the following is/are correct?
 □ A.
    std::string *p = new std::string("Hello");
    std::free(p);
 This code deallocates the block of memory dynamically allocated by new, so it has no memory leaks and has no undefined behaviors.
 \bigcap B
    std::string *p = static cast<std::string *>(std::malloc(sizeof(std::string)));
    std::string *q = new std::string;
 Both *p and *q are empty strings (equal to std::string("")).
 □ C.
    int *p = new int[n];
    for (int i = 0; i != n; ++i)
      delete p + i;
 The loop here has the same effect as delete[] p;, which correctly deallocates all blocks of memory allocated by new int[n].
 \square D.
    int *a = new int[n]{1, 2, 3};
    std::cout << a[3];
    delete[] a;
```

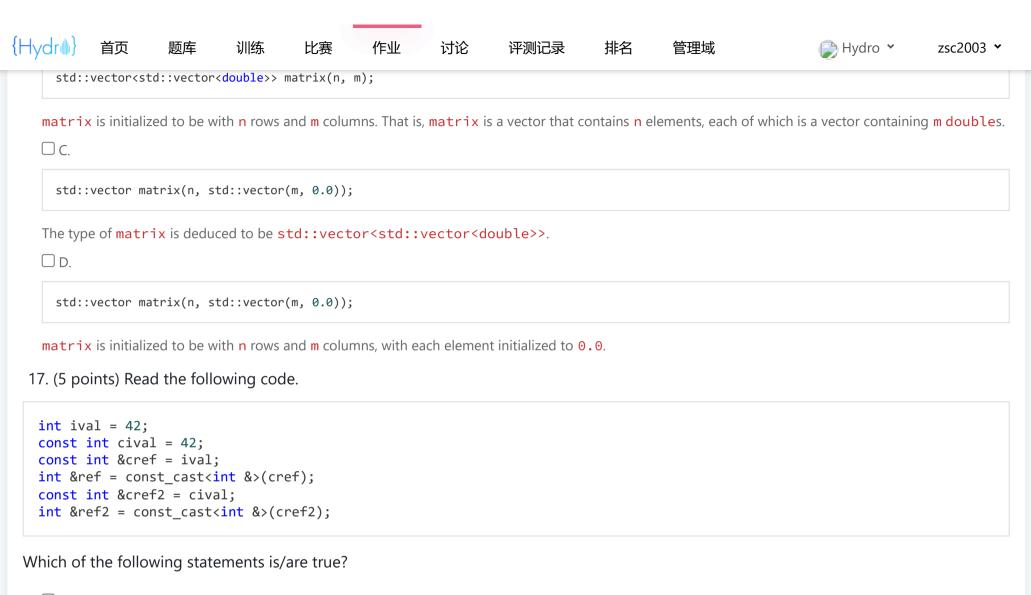
Suppose $n \ge 4$. This code will output 0 and has neither memory leaks nor undefined behaviors.

```
void print_array_cpp(int (&a)[10]);
  void print array c(int b[10]);
  int a[10];
  int b[20];
  int ival;
Which of the following statements is/are true?
  A. The a on the first line and the a on the third line refer to the same variable.
  B. Both print_array_cpp(a) and print_array_c(a) compile.
  ☐ C. Both print_array_cpp(b) and print_array_c(b) compile.
  D. print_array_c(&ival) compiles, while print_array_cpp(&ival) does not.
  ☐ E. In function print_array_cpp, sizeof(a) is equal to 40.
  F. In function print_array_c, sizeof(b) will be evaluated at run-time and evaluates to the size of the array passed in.
13. (5 * 2 points) Given the overloaded functions:
  void fun(int &);
  void fun(const int &);
  void fun(double);
Select the results of overload resolution for the following calls to fun.
(a)
  int ival = 42;
 fun(ival);
  O A. fun(int &)
  OB. fun(const int &)
```

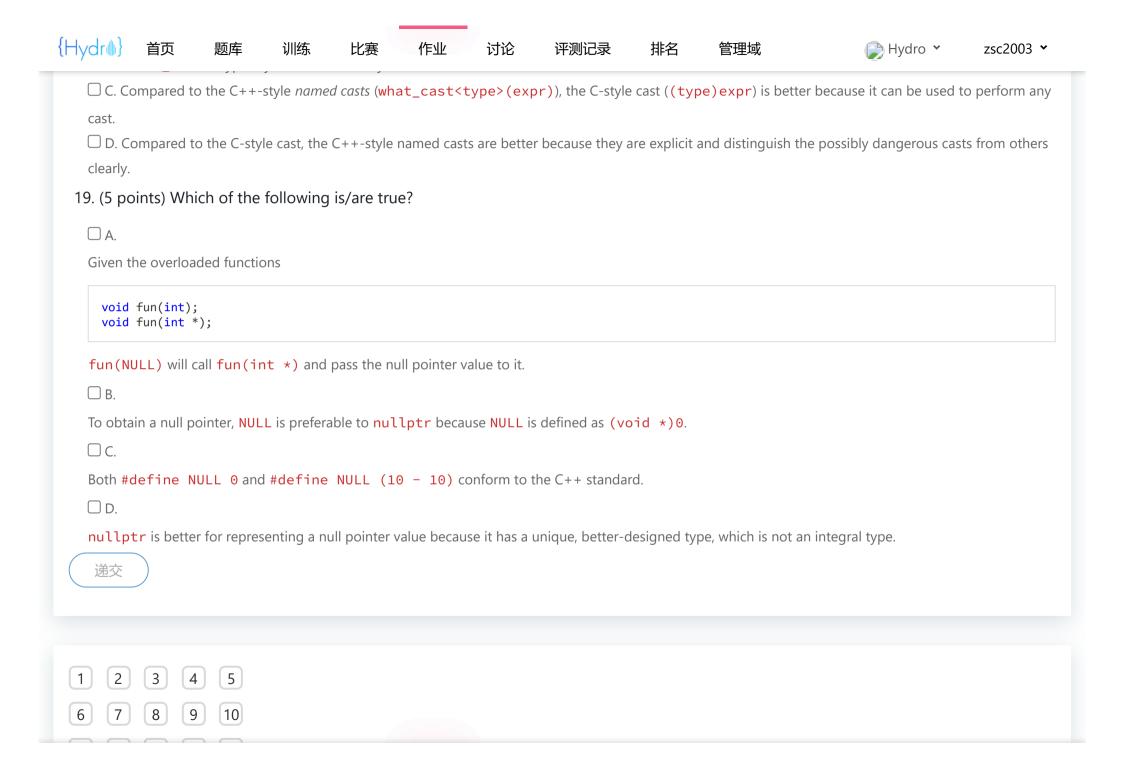
【Hydr●】 首页 题库 训练 比赛 作业 讨论 评测记录 排名 管理域 ◎ Hydro ➤ zsc2003 ➤

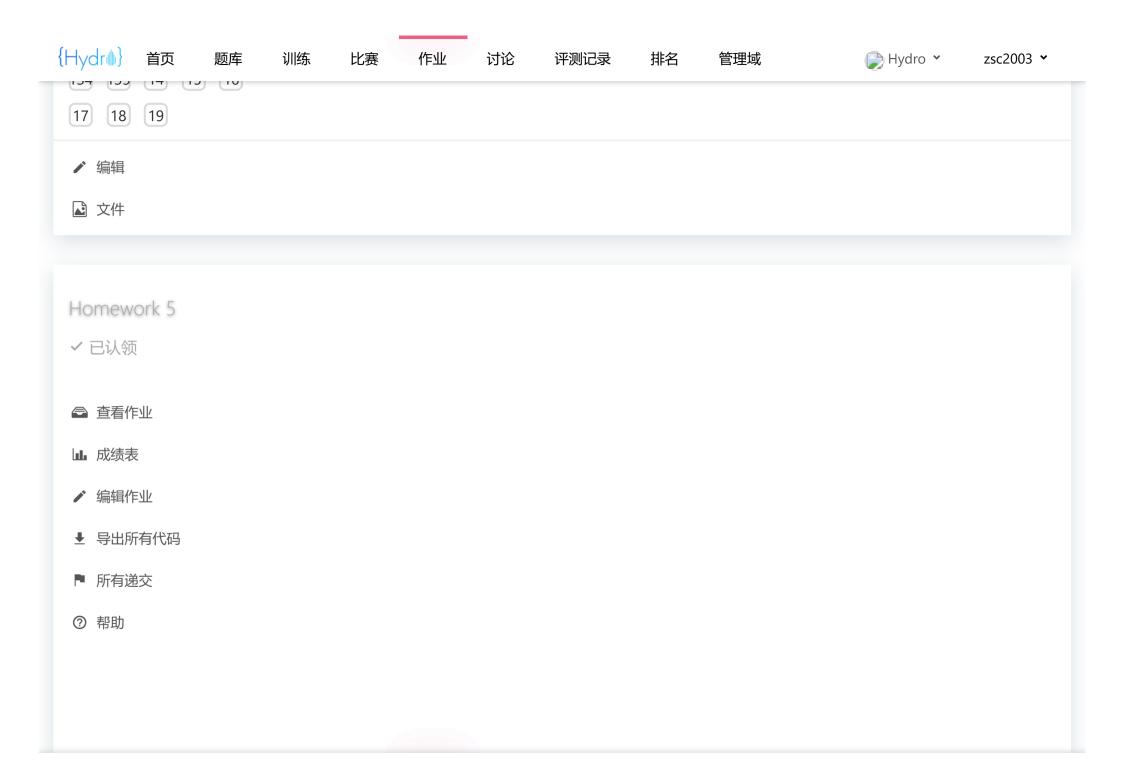
O E. No matching function for this call (b) const int cival = 42; fun(cival); O A. fun(int &) OB. fun(const int &) OC. fun(double) O D. Ambiguous call O E. No matching function for this call (c) fun(3.14f) O A. fun(int &) OB. fun(const int &) OC. fun(double) O D. Ambiguous call O E. No matching function for this call (d) fun(42) OA. fun(int &) OB. fun(const int &) OC. fun(double) O D. Ambiguous call O E. No matching function for this call (e) fun('a') (Hard. Try this out on your computer.)





- \square A. This code will generate a compile-error.
- ☐ B. ref is a reference that is bound to ival.
- C. The const_cast on the fourth line is unnecessary: int &ref = cref; works just fine, because cref is actually bound to a non-const variable.
- ☐ D. After this code, ++ref2; compiles but results in undefined behavior.
- 18. (5 points) Which of the following statements is/are true?





已结束

题目

5

开始时间

2023-3-31 1:30

截止时间

2023-4-15 0:00

可延期

24 小时

状态

评测队列

服务状态

开发

开源

API

【Hydr●】 首页 题库 训练 比赛 作业 讨论 评测记录 排名 管理域 ◎ Hydro * zsc2003 *

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