

객체지향프로그래밍 - 과제3

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5. Sort the following binary operators in order to high to low precedence : +, -, *, /, %, =.

*, /, %

+, -

=

6.

```
#include <iostream>
using namespace std;
int main(){
    int a = 0, b = 0;
    cout << "Please enter the first number : ";
    cin >> a;
    cout << "Please enter the second number : ";
    cin >> b;
    cout << a << " + " << b << " = " << a + b << endl;
    cout << a << " - " << b << " = " << a - b << endl;
    cout << a << " * " << b << " = " << a * b << endl;
    cout << a << " / " << b << " = " << a / b << endl;
    cout << a << " % " << b << " = " << a % b << endl;
}
```

7.

```
float a = 0, b = 0;
cout << "Please enter the first number : ";
cin >> a;
cout << "Please enter the second number : ";
cin >> b;
cout << a << " + " << b << " = " << a + b << endl;
cout << a << " - " << b << " = " << a - b << endl;
cout << a << " * " << b << " = " << a * b << endl;
cout << a << " / " << b << " = " << a / b << endl;
```

8. Given the following declaration:

```
int x = 2;
```

Indicate what each of the following C++ statements would print.

(a) x

x를 string 안에 넣었기 때문에 문자 그대로 출력됐습니다.

(b) x

x를 character 안에 넣었기 때문에 문자 그대로 출력됐습니다.

(c) 2

x를 변수처리 했기 때문입니다.

(d) x+1

string 안의 문자열이 그대로 출력됩니다.

(e) 121

x가 int형으로 변형되면 ASCII로 인해 120인데 거기에 1이 더해졌기 때문에 121이 나옵니다.

(f) 3

x가 변수처리 되었고 int형으로 지정이 되었기때문에 합인 3이 나옵니다.

9. Sort the following types in order from narrowest to widest : int, double, float, long, char.

char < int = long < float < double

10. Given the following declarations:

```
int i1 = 2, i2 = 5, i3 = -3;  
double d1 = 2.0, d2 = 5.0, d3 = -0.5;
```

```
int i1 = 2, i2 = 5, i3 = -3;  
double d1 = 2.0, d2 = 5.0, d3 = -0.5;  
cout << i1 + i2 << endl; // 7  
cout << i1 / i2 << endl; // 0  
cout << i2 / i1 << endl; // 2
```

```

cout << i1 * i3 << endl; // -6
cout << d1 + d2 << endl; // 7
cout << d1 / d2 << endl; // 0.4
cout << d2 / d1 << endl; // 2.5
cout << d3 * d1 << endl; // -1
cout << d1 + i2 << endl; // 7
cout << i1 / d2 << endl; // 0.4
cout << d2 / i1 << endl; // 2.5
cout << i2 / d1 << endl; // 2.5
cout << i1 / i2 * d1 << endl; // 0
cout << d1 * i1 / i2 << endl; // 0.8
cout << d1 / d2 * i1 << endl; // 0.8
cout << i1 * d1 / d2 << endl; // 0.8
cout << i2 / i1 * d1 << endl; // 4
cout << d1 * i2 / i1 << endl; // 5
cout << d2 / d1 * i1 << endl; // 5
cout << i1 * d2 / d1 << endl; // 5

```

11. What is printed by the following statement:

```

std::cout << /* 5 */ 3 << 'n';
>> 3

```

12. Given the following declarations:

```

int i1 = 2, i2 = 5, i3 = -3;
double d1 = 2.0, d2 = 5.0, d3 = -0.5;

```

```

cout << i1 + (i2 * i3) << endl; // -13
cout << i1 * (i2 + i3) << endl; // 4
cout << i1 / (i2 + i3) << endl; // 1
cout << i1 / i2 + i3 << endl; // -3
cout << 3 + 4 + 5 / 3 << endl; // 8
cout << (3 + 4 + 5) / 3 << endl; // 4
cout << d1 + (d2 * d3) << endl; // -0.5
cout << d1 + d2 * d3 << endl; // -0.5
cout << d1 / d2 - d3 << endl; // 0.9
cout << d1 / (d2 - d3) << endl; // 0.363636
cout << d1 + d2 + d3 / 3 << endl; // 6.83333
cout << (d1 + d2 + d3) / 3 << endl; // 2.16667
cout << d1 + d2 + (d3 / 3) << endl; // 6.83333
cout << 3 * (d1 + d2) * (d1 - d3) << endl; // 52.5

```

14. Can block comments be nested?

안됩니다.

22. Write the shortest way to express each of the following statements.

```
x += 1;
x /= 2;
x -= 1;
x += y;
x
```

24.

저는 먼저 r이 초기화되지 않아서 에러가 났고, 두번째로는 계속 답이 0으로 났습니다.

따라서 저는 먼저 r을 0이나 1로 초기화시켜주어서 에러를 없앴고,

해당 문제에서는

```
C = 2 * PI * r;
```

이 입력보다 위에 있어서 항상 결과값이 초기화한 r을 이용한 결과로 나왔습니다.

하지만 저 코드를 입력받고 나서 작성해보니 올바른 결과값이 나왔습니다.

25.

```
double x1, x2, y1, y2;
char left_paren, comma, right_paren;
cout << "Please enter the first point : ";
cin >> left_paren >> x1 >> comma >> y1 >> right_paren;
cout << "Please enter the second point : ";
cin >> left_paren >> x2 >> comma >> y2 >> right_paren;
cout << "The midpoint of " << left_paren << x1 << comma << y1 << right_paren
    << " and " << left_paren << x2 << comma << y2 << right_paren << " is "
    << left_paren << (x1 + x2) / 2 << comma << (y1 + y2) / 2 << right_paren;
```

Additional exercises

A. If originally $x=4$ and $y=5$, what are the values of x and y after the evaluation of each of the following expressions?

1. $x++ + y$
2. $x++ + --y$
3. $++x - y--$

```
int x = 4, y = 5;
cout << x++ + y << endl; // 9
cout << x++ + --y << endl; // 9
cout << ++x - y-- << endl; // 3
```

B. If $x = 2945$, what is the value of each of the following expressions?

```
int x = 2945;
cout << x % 10 << endl; // 5
cout << x / 10 % 10 << endl; // 4
cout << x / 100 % 10 << endl; // 9
```

C. Write a program that extracts and prints the right-most digit of the integral portion of a float.

```
int a;
while (a>1) {
    a = a % 2;
}
cout << a;
```

D. Write a program that calculates and prints the area and perimeter of a rectangle from a user-supplied (cin) length and width.

```
double length=0, width=0;
cout << "length : ";
cin >> length;
cout << "width : ";
cin >> width;
cout << "Perimeter : " << (length + width) * 2;
```

