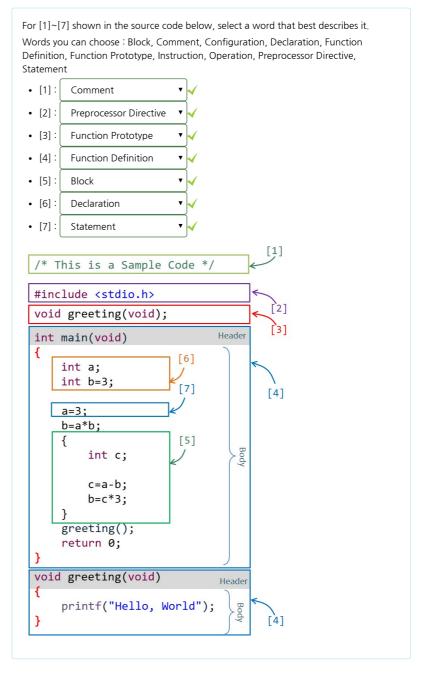
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문제 **3** 정답 총 4.00 점에서 4.00 점 할당



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문제 **4** 부분적으로 맞음 총 5.00 점에서 4.50 점 할당

For the source code below, determine whether it raises a syntax error or not. Select "E" if it raise a syntax error. Select "X", if it is not an error.

```
#include <stdio.h>
int main(void)
{
       int _id;
                               //
                                    Χ
       int not#me;
                                    E ▼
                               //
       int 010_south;
                               //
                                    E ▼
       int so_am_i;
                                    χ ▼
       int star*it;
                                    Е
                               //
       int -plus;
                                    Ε
        int me_to-2;
                                    Ε
        int long;
                                    Ε
        int break;
                               //
       int scanf;
                                    Ε
        return 0;
```

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문제 5 정답

총 4.00 점에서 4.00 점 할당 Write down the output of each printf() function from the below program.

The FSF "%.nlf" means to output the value of a double variable with n digits after ".". For example, "%.1lf" specifies the number of digits after "." is 1. If the value to be printed is 1.200000, the output will be 1.2.

```
#include <stdio.h>
int main(void)
{
                na=5, nb=3, nx;
        double da=4.0, db=3.2, dx;
        nx = na/nb;
        printf("%d\n", nx);
                                // 1
        nx = na%nb;
        printf("%d\n", nx);
                                // 2
        nx = db;
        printf("%d\n", nx);
                                // 3
        nx = db/da;
        printf("%d\n", nx);
                                // 4
        dx = na/nb;
        printf("%.1lf\n", dx); // 5
        dx = (double)nb/na;
        printf("%.11f\n", dx); // 6
        dx = (int)db/na;
        printf("%.11f\n", dx); // 7
        return 0;
}
```

문제 6 정답

총 4.00 점에서 4.00 점 할당

```
What are the types of conversion in the following example?
 • A:
        Implicit ▼
                       Extended ▼ ✓ Conversion
• B:
       Implicit ▼
                      Narrowed ▼ ✓ Conversion
 #include <stdio.h>
 int main(void)
 {
     int a = 1, b=2;
     float c=2.0, d=2.0;
     c = a / 2;
                    //A
     b = c / d;
     return 0;
```

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문제 7

정답 총 5.00 점에서 5.00 점 할당 It is known that the normal range of normal pulse rate is between 60 and 90. That is, $60 \le n$ normal pulse rate ≤ 90 .

We want to check if the input pulse rate belongs to the normal range. Choose all of the conditional expressions that are valid for [1].

```
#include <stdio.h>
 int main(void)
 {
         int nPulseRate;
         printf(" Input pulse rate: ");
          scanf("%d", &nPulseRate);
          if ([1])
                   printf("\n%d is in a normal range.\n", nPulseRate);
     return 0;
 }
하나 이상을 선택하세요.
■ 1. 60 <= nPulseRate <= 90
■ 2. !(60 <= nPulseRate <= 90)</p>
□ 3. nPulseRate >= 60 & nPulseRate <= 90

✓ 4. nPulseRate >= 60 && nPulseRate <= 90 ✓</p>
■ 5. nPulseRate < 60 || nPulseRate > 90

✓ 6. !(nPulseRate < 60 || nPulseRate > 90) ✓
```

답이 맞습니다.

정답: nPulseRate >= 60 && nPulseRate <= 90, !(nPulseRate < 60 || nPulseRate > 90)

문제 8

정답

총 5.00 점에서 5.00 점 할당 In the following code, we want to determine whether the 2nd last digit of the int variable a is even or odd. For example if a is 374, the 2nd digit number, 7, is determined into odd. Complete the code by filling the blank;

You can safely assume that the integer variable ${\bf a}$ has more than three digits. That is, a \geq = 100.

DO NOT include inessential white spaces.

댓글:

문제 **9** 틀림 총 5.00 점에서 0.00 점 할당 **PLMS**

문제 10 정답 총 4.00 점에서 4.00 점 할당 Compare the following 2 programs. If executed, how many times does each program outputs the string "found"? Program 1: 3 ✓, Program 2: Program 2 Program 1 #include <stdio.h> #include <stdio.h> int main(void) int main(void) // ind // ind int i; int i; ex int a[10]={3,2,8,0,2,3,5, int a[10]={3,2,8,0,2,3,5, 6,4,2}; 6,4,2}; for(i=9; i>=0; i--) { for(i=9; i>=0; i--) { if (a[i]%2) { if (a[i]%2) { puts("found"); puts("found"); break; return 0; return 0; } }

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문제 11

정답 총 4.00 점에서 4.00 점 할당 Write the output of the following program. Fill in each blank with an appropriate number in printf(). 2 3 1 #include <stdio.h> double square(double x) { printf("1 "); return x * x; } double cube(double x) { printf("2 "); return x * square(x); double pi(double x) { printf("3 "); return 3.14 * x; double sphere(double r) { printf("4 "); return 4.0 / 3.0 * pi(cube(r)); } int main(void) { double radius = 1.5; double volume; volume = sphere(radius);

문제 12

부분적으로 맞음 총 6.00 점에서 5.00 점 할당 In terms of Scope, variables can be classified into two types.

- In the case of a variable declared in a function area, it is valid within the function and is called a local variable.
- If a variable is declared outside the function, it is valid in the entire function of the source file and is called a Grobal X variable.

Write the output of the following program.

return 0;

}

Execution Result s1= 111 ,s2= 100

```
#include <stdio.h>
int gSum=0;
int sum1(int n)
    gSum = gSum + n;
    return gSum;
}
int sum2(int n)
    int gSum = 0;
    gSum = gSum + n;
    return gSum;
int main(void)
{
    int n1=1,n2=10,n3=100;
    int s1, s2;
    s1 = sum1(n1); s1 = sum1(n2); s1 = sum1(n3);
    s2 = sum2(n1); s2 = sum2(n2); s2 = sum2(n3);
    printf("s1=%d,s2=%d\n",s1,s2);
    return 0;
```

문제 **13** 정답 총 5.00 점에서 5.00 점 할당 PLMS

For the following user input (which of each is stored to a variable \mathbf{n}), write the output value of the last printf() function in main().

User Input	The output of the last printf()
1	hanoi_tower() called 1 ✓ times
2	hanoi_tower() called 3 ✓ times
3	hanoi_tower() called 7 ✓ times
4	hanoi_tower() called 15 vimes
5	hanoi_tower() called 31 vimes

```
#include <stdio.h>
int n_hanoi_called;
void hanoi_tower(int n, int ox, int tx, int mx) {
        n_hanoi_called++;
        if (n < 1) \{
               printf("Error: n >= 1\n");
        } else if (n == 1) {
            printf("%d -> %d\n", ox, tx);
        } else {
                hanoi_tower(n-1, ox, mx, tx);
                printf("%d -> %d\n", ox, tx);
                hanoi_tower(n-1, mx, tx, ox);
        }
int main(void) {
   int n;
   n_hanoi_called = 0;
    printf("Enter the height of the tower\n");
    scanf("%d",&n);
    hanoi_tower(n, 1, 3, 2);
    printf("hanoi_tower() called %d times\n",
                n_hanoi_called);
    return 0;
}
```

문제 14

부분적으로 맞음 총 5.00 점에서 4.00 점 할당 PLMS

What is the output of the following program? Fill in the blanks.



```
#include <stdio.h>
int main(void)
{
    int a=5, b=2, c=4, d=5;

    printf("%d\n", a == 5);
    printf("%d\n", b < d < c);
    printf("%d\n", b % c * a && a % d * b);
    printf("%d\n", a % b * c);
    printf("%d\n", d % b * c > 5 || c % b * d < 7);
    return 0;
}</pre>
```

문제 15

정답 총 6.00 점에서 6.00 점 할당 We want to store a value, 4312, in a computer system.

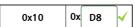
To be stored in a computer, all information should be encoded into binary values.

We have two possible choices in this case.

- 1) Encode each digit as an **ASCII** character.
- 4312 has 4 digits and each digit require 1 byte. So we need memory space by 4 bytes.
- Let the following figure represents the 4 bytes memory space for 4312.
 Fill in the blanks with suitable binary values in Hexadecimal format.

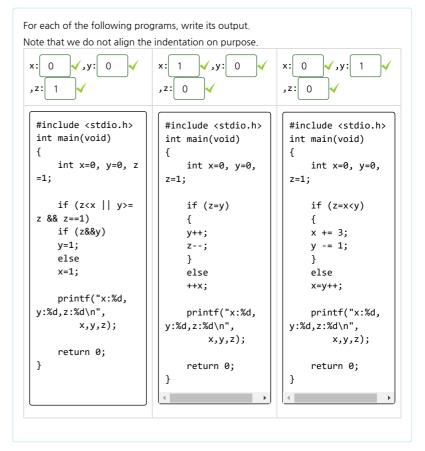


- 2) Encode 4312 as a signed short integer with memory space by 2 bytes.
- Let the following figure represents the 2 bytes memory space for the value.
- Fill in the blanks with appropriate binary values in **Hexadecimal format**.



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문제 **16** 정답 총 5.00 점에서 5.00 점 할당



문제 **17** 부분적으로 맞음 총 5.00 점에서 4.00 점 할당

```
What is the output of the following program?
 #include <stdio.h>
 int main(void)
 {
                 // index
     int i;
     int len;
                // length
     char msg[]="Hello 0.\0.7\n";
     for(i=0;msg[i]!='\0';i++)
        ;
     len = i;
     printf("The size of the char array msg[] is %d\n",sizeof(msg));
     printf("The length of the string [%s] : %d\n", msg,len);
     return 0;
}
                              Execution Result
The size of the char array msg[] is
                        Hello 0.
The length of the string [
```

PLMS

문제 18

정답 총 5.00 점에서 5.00 점 할당 What is the output of the following program?

- Note that we can use a hexadecimal constant in the C language by adding "0x" in front of an hexadecimal value as shown in the variable initialization part the of the code.
- The format specifier "%X"in printf() converts an unsigned integer into hexadecimal representation.

```
Execution Result

un1=0x1234
un2=0xABCD
un1&mask=0x 1200
un1|mask=0x FF34
un1^un1=0x 0000
un1^0=0x 1234
(un1^un2)^un2=0x 1234
```

```
#include <stdio.h>
int main(void)
   unsigned short un1 = 0x1234;
                                       // Hexadecimal Value
   unsigned short un2 = 0xABCD;
                                        // Hexadecimal Value
   unsigned short mask = 0xFF00;
                                       // Hexadecimal Value
   printf("un1=0x%X\n",un1);
   printf("un2=0x%X\n",un2);
   printf("un1&mask=0x%X\n",un1&mask);
   printf("un1|mask=0x%X\n",un1|mask);
   printf("un1^un1=0x%X\n",un1^un1);
   printf("un1^0=0x%X\n",un1^0);
   printf("(un1^un2)^un2=0x%X\n",(un1^un2)^un2);
   return 0;
}
```

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문제 19

정답 총 5.00 점에서 5.00 점 할당 The user input value of variable a is 3. What is the output of the following source code

```
output

| a==3,
| 2a==3, a==4,
| 3a==2, a==3,
| 4a==2, a==3, a==4,
```

```
#include <stdio.h>
int main(void) {
   int a;
    scanf("%d",&a);
    switch( a ) {
        case 1:
            printf("a==1, ");
            break:
        case 2:
            printf("a==2, ");
        case 3:
           printf("a==3, ");
        case 4:
            printf("a==4, ");
            break;
        case 5:
            printf("a==5, ");
        default:
            printf("a==other, ");
    printf("\n");
    return 0;
}
```

문제 20

정답 총 4.00 점에서 4.00 점 할당 For each "case" statements in the following source code, determine whether it raises a syntax error or not. if an error, select 'E'; otherwise select 'X' $^{\prime}$

```
case 1: X ▼
case two: E ▼
case 1+2: X ▼
case FOUR: X ▼
```

```
#include <stdio.h>
#define FOUR 4
int main(void) {
   int a, two=2;
   scanf("%d", &a);
   switch( a ) {
        case 1:
           printf("a==one\n");
            break;
                                // 2
        case two:
            printf("a==two\n");
           break;
        case 1+2:
                         // 3
            printf("a==three\n");
           break;
        case FOUR:
                          // 4
            printf("a==four\n");
            break;
       default:
            printf("a==other\n");
    }
    return 0;
}
```

PLMS

문제 **21** 정답 총 5.00 점에서 5.00 점 할당

```
What is the execution result of the following source code?
                                                       2 ▼ ✓
1. i=2 i=3
2. i=3 i=3 i=4
3. i=3 i=4
4. i=2 i=3 i=4
 #include <stdio.h>
 int main(void) {
          int i=2;
          while (i < 3) {
    printf("i=%d ",++i);
          }
          do {
                   printf("i=%d ",i++);
          } while (i < 3);</pre>
          printf("i=%d\n", i);
          return 0;
 }
```