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Predict the output

!= Not Equal == Equal <= less than or equal to >= Greater than or equal to && AND Both Must be true || OR ! NOT

1. [2 pts]

```
int x = -5;
if (x)
   cout << "A" << endl;
else
   cout << "B" << endl;
```

A

2. [2 pts]

```
int score;
score = -1;

if (score <= 0);
   cout << "cheer up!" << endl;
cout << "Good ";
cout << "Luck!";
```

cheer up!
Good Luck!

3. [2 pts]

```
bonus = 40;
if (bonus > 100)
   cout << "Give!\n";
   cout << "Save!\n";
   cout << "Spend!" << endl;
```

Save!
Spend!

4. [2 pts]

```
int donuts = 10;

if (donuts = 20)
   donuts += 8;
else
   donuts += 2;
cout << donuts << endl;
```

donuts += 8
donuts = donuts + 8

donuts = donuts + 2

12

12

+=

example: c += A

c = c + A

5. [4 pts]

```
testScore = 60;
if (testScore> 50)
   cout << "You Pass!";
if (testScore <= 50)
   cout << "You need to STUDY!";
else
   cout << "good!";
```

You Pass!

6. [4 pts]

```
y = 25;
if (y > 40)
  cout << "1";
else
  if (y > 30)
    cout << "2";
  else
    if (y > 20)
      cout << "3";
    else
      cout << "4";
```

3

7. [4 pts]

```
score = 4;
if (score > 5)
   score = score + 5;
else if (score < 2)
   score = score + 6;
else
   score = score + 10;
cout << score << endl;
```

9

8. [5 pts]

```
int x = 166,
    y;
y = x % 100;
if (x < 99)
{
   cout << "A" << endl;

   if (y < 60)
      cout << "1" << endl;
   else
      cout << "2" << endl;
}
else
{
   cout << "B" << endl;

   if (y >= 60)
      cout << "3" << endl;
   else
      cout << "4" << endl;
}
```

B
3

* We can have if else statements inside of if else statements?
* how many can we have?

9. [5 pts]

```
a = 1;
b = 6;
if (a > 5 || b > 10)
{
   cout << a << " " << b << endl;
}
else
{
   cout << b << " " << a << endl;
}
```

6 1

Fill in the following tables.

!= Not equal

bool → 0 False, 1 True

10. [8 pts]

Relational expression (int a = 7, b = 8; bool answer;)	Value of *answer* (true or false)	output
answer = (a + 1) == b; (7 == 8) cout << answer;	true	1
answer = (a - 6) <= b; (1 <= 8) cout << answer;	true	1
answer = 5 != a; (5 Notequal 7) cout << answer;	true	1
answer = (5 * a) > 4 (35 > 4) cout << answer;	true	1

(and) Both must be true

11. [2 pts]

```
if (a < 5 && b <= 10)
    cout << "1";
else
    cout << "2";
```

a	b	output
5	10	2
5	9	2
6	10	2
6	11	2

(or) one of the other must be true

12. [2 pts]

```
if (a < 5 || b <= 10)
    cout << "1";
else
    cout << "2";
```

a	b	output
5	10	1
5	9	1
6	10	1
6	11	2

13. [2 pts]

and

```
if (! (a < 5 && b <= 10))
    cout << "1";
else
    cout << "2";
```

	a	b	output
False	5	10	1
False	5	9	1
False	6	10	1
False	6	11	1

1. [7 pts] Write a code SEGMENT using if statement to do the following, reset the value of *time* to 1 if the time was greater than 13.

Assume the variable *time* has already been defined and given values.

```
if (time > 13) {
    time = 1;
}
else {
    time = 0;
}

cout >> time >> endl;
```

2. [7 pts] Write a code SEGMENT using if statement to do the following:
If *num1* is between 150 and 250, then double it; otherwise, halve it.
Assume the variable *num1* has already been defined and given values.

&& ???

```
if (num1 >= 150 && num1 <= 250) {
    num1 = num1 * 2;
}
else {
    num1 = num1 / 2;
}

cout >> num1 >> endl;
```