What is the output? Why?

1.

```
#include <iostream>
int main() {
    std::cout << 2 + 2 * 2 << '\n';
}
```

2.

```
#include <iostream>
int main() {
    std::cout << (2 + 2) * 2 << '\n';
}
```

3.

```
#include <iostream>
int main() {
    std::cout << 11 / 4 << '\n';
}
```

4.

```
#include <iostream>
int main() {
    std::cout << 11.0 / 4 << '\n';
}
```

5.

```
#include <iostream>
int main() {
    std::cout << 11 % 4 << '\n';
}
```

6.

```
#include <iostream>
int main() {
    std::cout << "2 + 2 * 2 = " << 2 + 2 * 2 << '\n';
}
```

7.

```
#include <iostream>
int main() {
    char c = 'A';
    std::cout << (c + 1) << '\n';
}
```

8.

```
#include <iostream>
int main() {
    bool x = (5 < 6);
```

```cpp
    bool y = (5 == 6);
    std::cout << x << " " << y << '\n';
}
```

9.

```cpp
#include <iostream>
int main() {
    int a = 0;
    bool b = true || (++a > 0);
    std::cout << a << '\n';
}
```

10.

```cpp
#include <iostream>
int main() {
    int a = 0;
    bool b = false && (++a > 0);
    std::cout << a << '\n';
}
```

11.

```cpp
#include <iostream>
int main() {
    unsigned short a = 6, b = 3;
    std::cout << (a & b) << " " << (a | b) << " " << (a ^ b) << '\n';
}
```

12.

```cpp
#include <iostream>
int main() {
    unsigned short a = 3;
    std::cout << (a << 3) << " " << (a >> 1) << '\n';
}
```

13.

```cpp
#include <iostream>
int main() {
    short a = -8;
    std::cout << (a >> 1) << '\n';
}
```

14.

```cpp
#include <iostream>
int main() {
    std::cout << sizeof(0) << " " << sizeof(0L) << " " << sizeof(0LL) <<
'\n';
}
```

15.

```cpp
#include <iostream>
int main() {
    std::cout << (0u + 0) << " " << (0ul + 0ll) << '\n';
```

```
}
```

16.

```cpp
#include <iostream>
int main() {
    double a = 0.1, b = 0.2;
    std::cout.setf(std::ios::fixed);
    std::cout.precision(17);
    std::cout << (a + b) << '\n';
}
```

17.

```cpp
#include <iostream>
int main() {
    double x = 1.0/0.0;
    double y = 0.0/0.0;
    std::cout << (x > 0) << " " << (x == x) << " " << (y == y) << '\n';
}
```

18.

```cpp
#include <iostream>
int main() {
    std::cout << "Hello\\n" << '\n';
    std::cout << "Hello\n";
}
```

19.

```cpp
#include <iostream>
int main() {
    char u = 'E';
    char l = u + ('a' - 'A');
    std::cout << l << '\n';
}
```

20.

```cpp
#include <iostream>
int main() {
    bool t = true, f = false;
    std::cout << (t + 5) << " " << (10L * f) << '\n';
}
```

21.

```cpp
#include <iostream>
int main() {
    unsigned int a = 12, b = 5;
    std::cout << (a & b) << " " << (a | b) << " " << (a ^ b) << '\n';
}
```

22.

```cpp
#include <iostream>
```

```cpp
int main() {
    unsigned int x = 7;
    std::cout << ~x << '\n';
}
```

23.

```cpp
#include <iostream>
int main() {
    unsigned int x = 3;
    std::cout << (x << 2) << '\n';
}
```

24.

```cpp
#include <iostream>
int main() {
    unsigned int x = 32;
    std::cout << (x >> 3) << '\n';
}
```

25.

```cpp
#include <iostream>
int main() {
    unsigned int x = 5;
    std::cout << ((x << 1) + (x >> 1)) << '\n';
}
```

26.

```cpp
#include <iostream>
int main() {
    unsigned int a = 42;
    std::cout << (a ^ a) << '\n';
}
```

27.

```cpp
#include <iostream>
int main() {
    unsigned int a = 7, b = 12;
    a = a ^ b;
    b = a ^ b;
    a = a ^ b;
    std::cout << a << " " << b << '\n';
}
```

28.

```cpp
#include <iostream>
```

```cpp
int main() {
    unsigned int mask = 1 << 3; // 8
    unsigned int x = 13;        // 1101_2
    std::cout << (x & mask) << '\n';
}
```

29.

```cpp
#include <iostream>
int main() {
    unsigned int x = 5;         // 0101_2
    unsigned int mask = 1 << 2; // 0100_2
    std::cout << (x | mask) << '\n';
}
```

30.

```cpp
#include <iostream>
int main() {
    unsigned int x = 13;        // 1101_2
    unsigned int mask = ~(1 << 2);
    std::cout << (x & mask) << '\n';
}
```

31.

```cpp
#include <iostream>
int main() {
    unsigned int x = 9;         // 1001_2
    unsigned int mask = 1 << 3; // 1000_2
    std::cout << (x ^ mask) << '\n';
}
```

32.

```cpp
#include <iostream>
int main() {
    unsigned int x = 57;
    std::cout << (x & 1) << '\n';
}
```

33.

```cpp
#include <iostream>
int main() {
    unsigned int x = 11;
    std::cout << (x << 1) << '\n';
}
```

34.

```cpp
#include <iostream>
int main() {
    unsigned int x = 25;
    std::cout << (x >> 1) << '\n';
}
```

35.

```cpp
#include <iostream>
int main() {
    unsigned int x = 6;   // 0110₂
    unsigned int y = 10;  // 1010₂
    std::cout << ((x & y) << 1) + (x | y) << '\n';
}
```